AR-15 TO M-16 CONVERSION BOOK

INDEX

CHAPTERS

NOTICE

This book contains information that gives explicit details on the construction and/or conversion of fully automatic firearms.

This is offered as information for academic study only.

On May 19th. 1986. a new N.F.A. full-auto firearms law went into effect. As of that date it is no longer legal for an unlicensed individual to convert a semi-automatic firearm into a machinegun or sub-machinegun.

The B.A.T.F. form I will not be accepted by the Bureau of Alcohol. Tobacco and Firearms. If it was not postmarked by midnight. May 19th. 1986.

Full-auto conversions listed in this book may legally be used only in TITLE II receivers by licensed TITLE II Manufactures.

If you have any doubts about your position in this matter. contact your local B.A.T.F. office for futher information.

INTRODUCTION

I was thinking when I started this book "Laudy, Laudy, I wish I'd had something like this when I first started converting AR-15's to full-auto." No such luck. Back then it was trial and error, and try again.

Don't get me wrong. There were those that seemed to have the required information. They hung out at Gun Shows and ran ads in underground newspapers. After paying any amount from $20.00 to $75.00 you would breathlessly be told how their brother-in-law, cousin, neighbor, friend, [pick one] did it! This gem of wisdom was usually "File da sear"!

Sadder, but no wiser, you would find yourself at the next gun show searching for someone in the know.

In the mid-seventies the drop-in auto-sear was born. This little piece of hardware was a boon to the full-auto fan. It would fit in any Colt AR-15 without any machine work or special tools.

Although using a drop-in auto-sear required replacing the AR-15 trigger, hammer, disconnector, selector and bolt carrier with M-16 parts, the parts were inexpensive and easily attainable.

Best of all, from the time U.P.S. hit the door with your conversion parts until you were on the way to the range to test fire your new machinegun, was only about 30 minutes.

The early eighties were just the opposite of the late sixties. It seemed you couldn't pick up any firearm publications that wasn't over ran with AR-15 conversion ads. Most tried to sell drop-in auto-sears. Others would show where to drill the hole for the original military auto-sear (most of these were incomplete and also incorrect), and then of course, for your ten bucks you could still buy the wisdom of the ages, "File da sear".

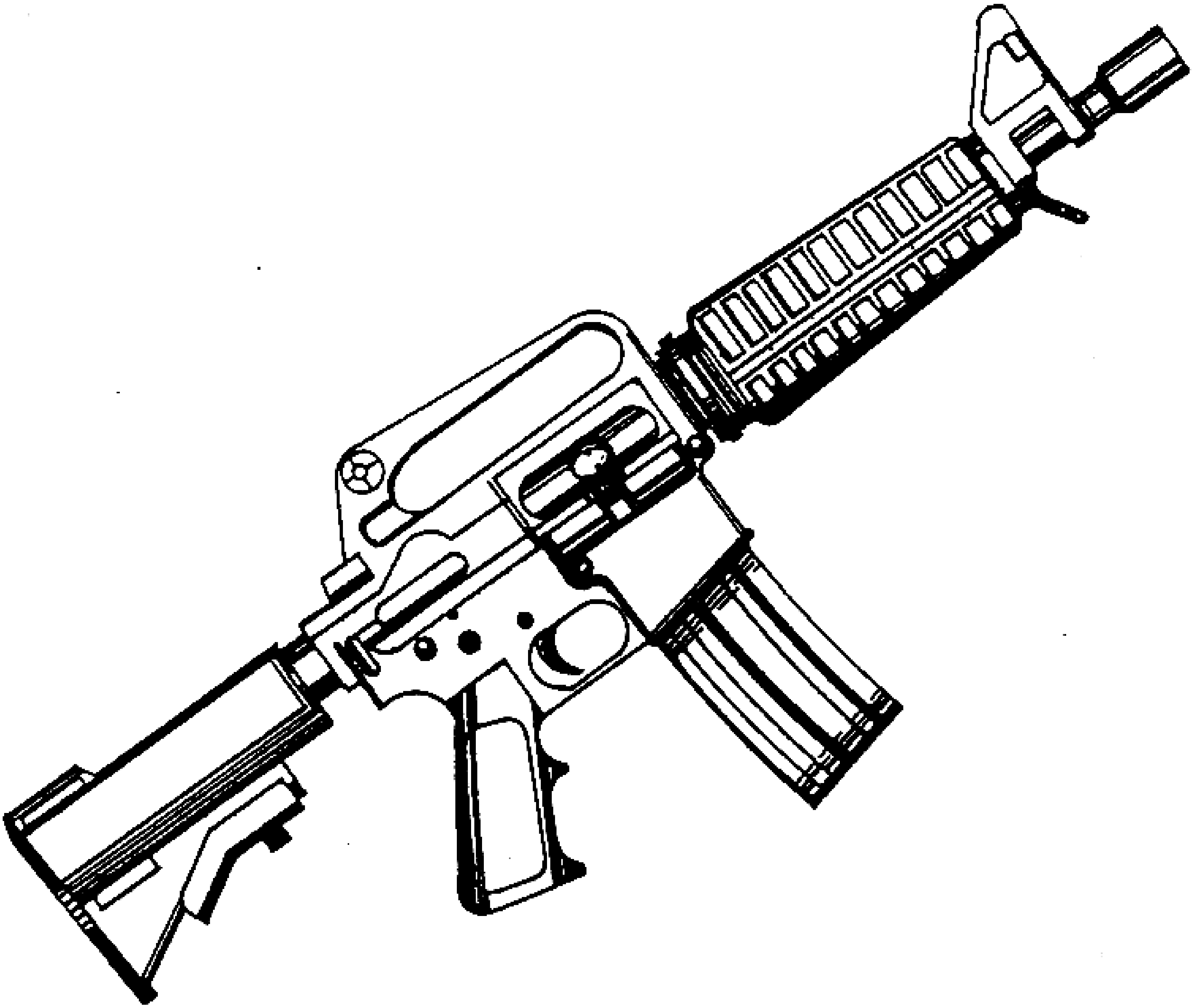
This AR-15 full-auto conversion book contains three methods of converting the AR-15 Sporter into a machinegun. One of them is full-auto only (the lightning link), the other two convert the Sporter to select-fire.

Whether you're interested in acquiring the knowledge to duplicate the original military select-fire M-16, or your interests run to how a drop-in auto-sear is manufactured and used, the information is here.

The lightning link (chapter three) is a story all by itself. Without changing any parts in the AR-15, without doing any machine work on the firearm, without so much as touching a screwdriver, file or punch to the firearm, it can be turned into a full-auto assault rifle.

NOTE.....The information contained in this book is for academic study only. For an unlicensed person to use the information to convert a semi-auto firearm into a machinegun is illegal. Severe penalties are authorized for violators.

M-16 DUPLICATION



M-16 DUPLICATION

The M-16 was developed as a fully automatic (selective fire) weapon by the Armalite Company. It was subsequently sold to Colt Firearms. They developed a semi-auto version known as the AR-15 to be sold as a sporting rifle to the civilian market.

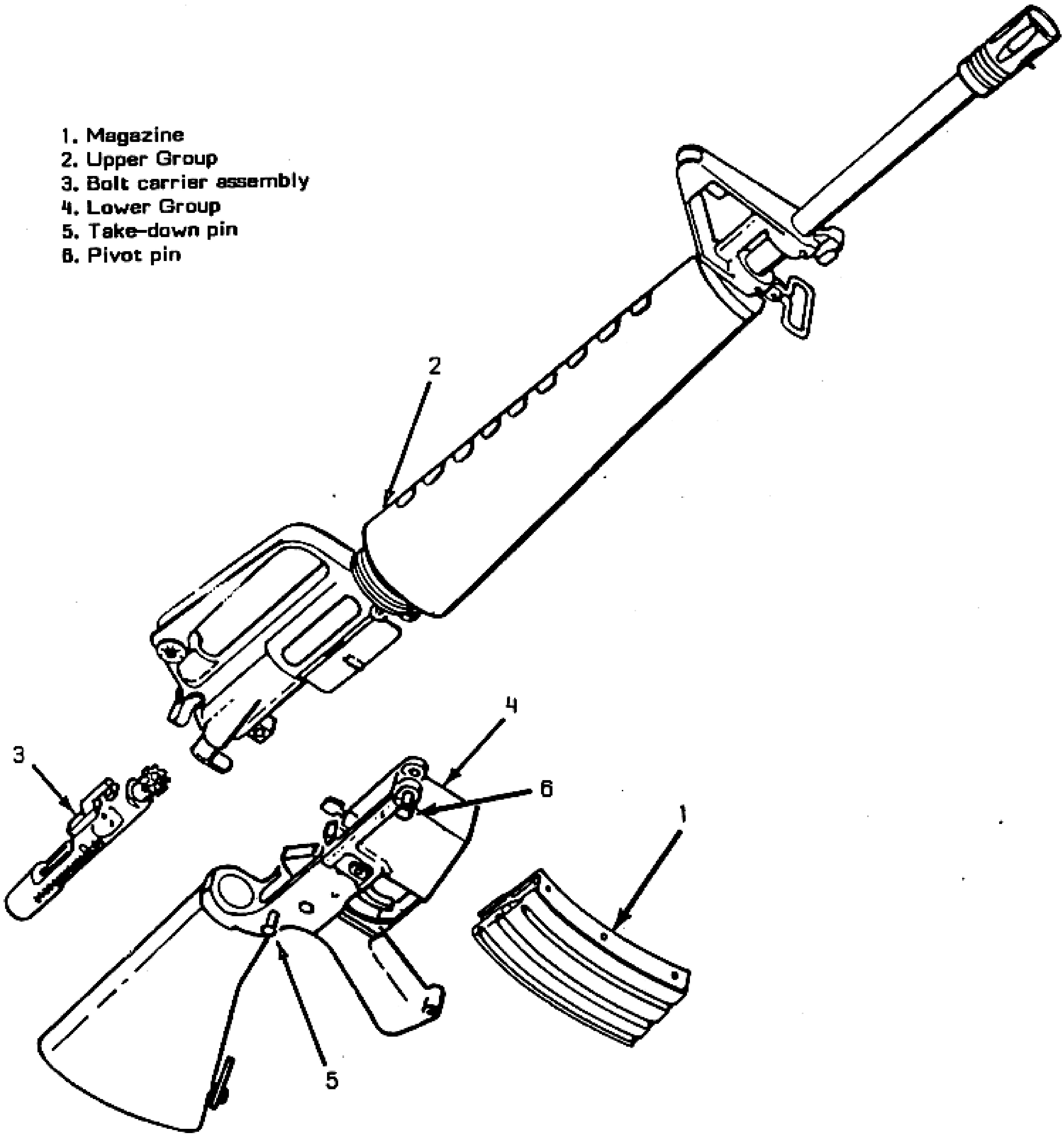
The AR-15 is mechanically the same as the M-16 except the parts used to produce fully automatic fire have been changed or deleted, and the upper and lower receivers have been slightly modified.

All AR-15 lower receivers, whether they are Colt or after market, have been machined in such a way as to leave an excess of metal on the inner rear walls and no auto-sear pin hole is drilled. This is done so the M-16 style auto-sear can't be installed.

What must be done, simply put, is change it to accept the M-16 auto-sear. To accomplish this you must remove the excess metal from the inner walls of the lower receiver, and drill one small hole for the M-16 auto-sear pin.

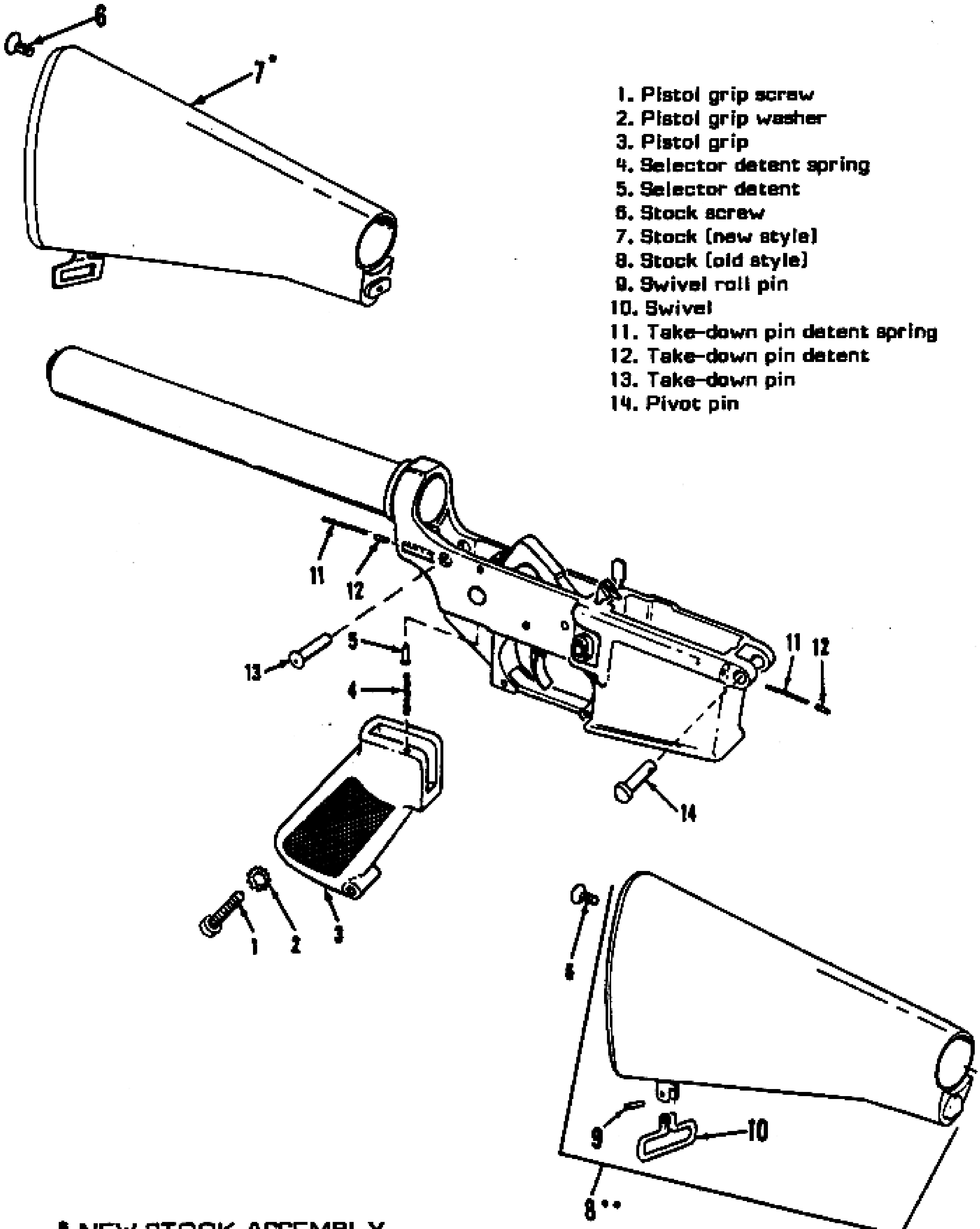
SEPARATING THE UPPER

1. Magazine
2. Upper Group
3. Bolt carrier assembly
4. Lower Group
5. Take-down pin
6. Pivot pin



Separating the upper receiver and barrel from the lower receiver and stock is simply a matter of pushing the take-down pin from the left to right and removing the pivot pin located at the forward upper part of the magazine well.

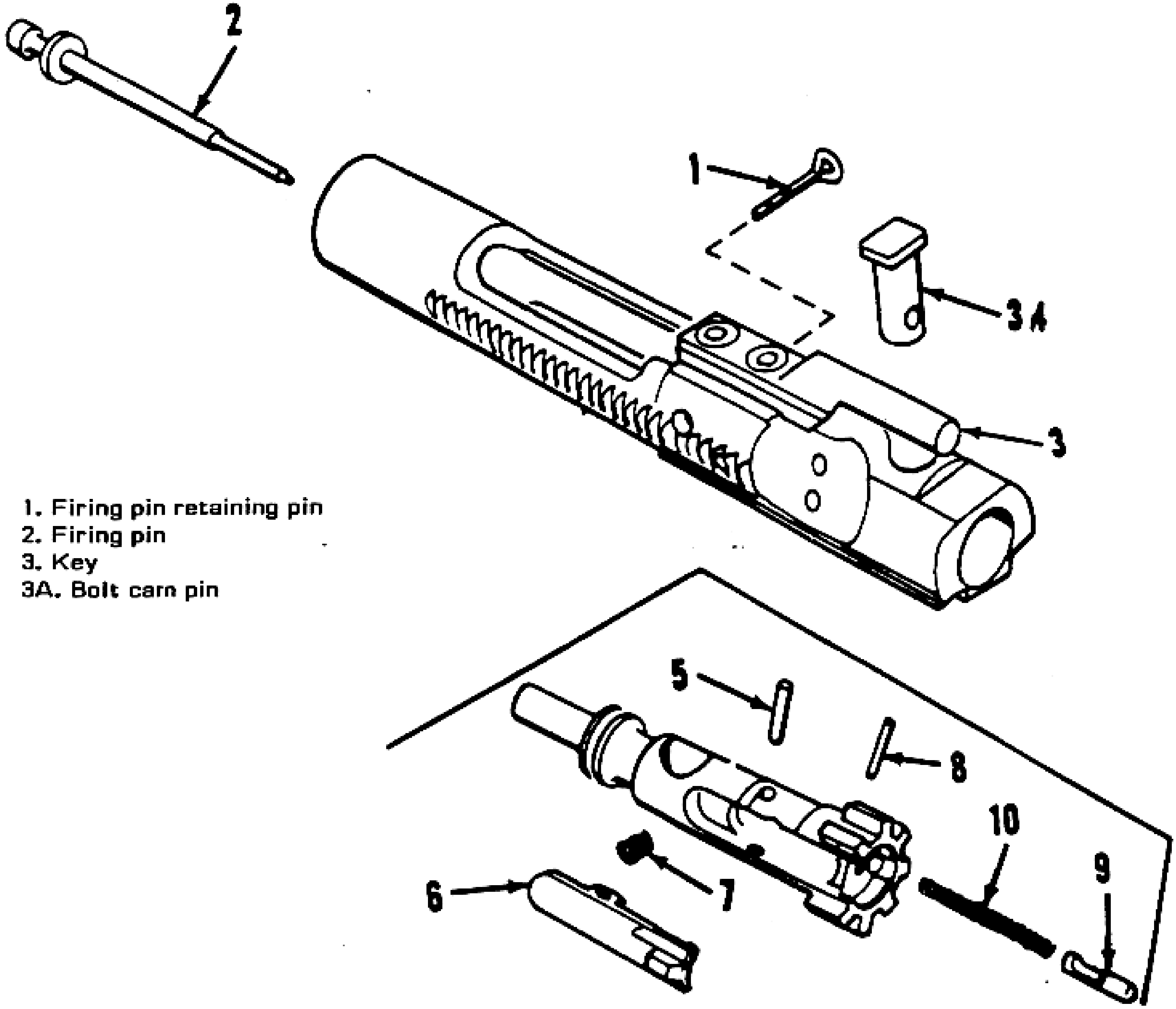
STOCK AND LOWER RECEIVER



1. Pistol grip screw
2. Pistol grip washer
3. Pistol grip
4. Selector detent spring
5. Selector detent
6. Stock screw
7. Stock (new style)
8. Stock (old style)
9. Swivel roll pin
10. Swivel
11. Take-down pin detent spring
12. Take-down pin detent
13. Take-down pin
14. Pivot pin

* NEW STOCK ASSEMBLY
** OLD STOCK ASSEMBLY

DISASSEMBLE CARRIER



1. Firing pin retaining pin
2. Firing pin
3. Key
3A. Bolt cam pin

It will be necessary to disassemble the AR-15 bolt carrier. The parts will be reassembled in the M-16 carrier.

Step 1..... Remove the firing pin, retaining pin (part 1) from the carrier.

Step 2..... Let the firing pin (part 2) drop out the rear of the bolt and carrier.

Step 3..... Remove the key (part 3) from the top of the bolt carrier. Note..... the two allen head key screws will be staked in place.

Step 4..... Pull the bolt cam pin (part 3-A) out the top of the carrier.

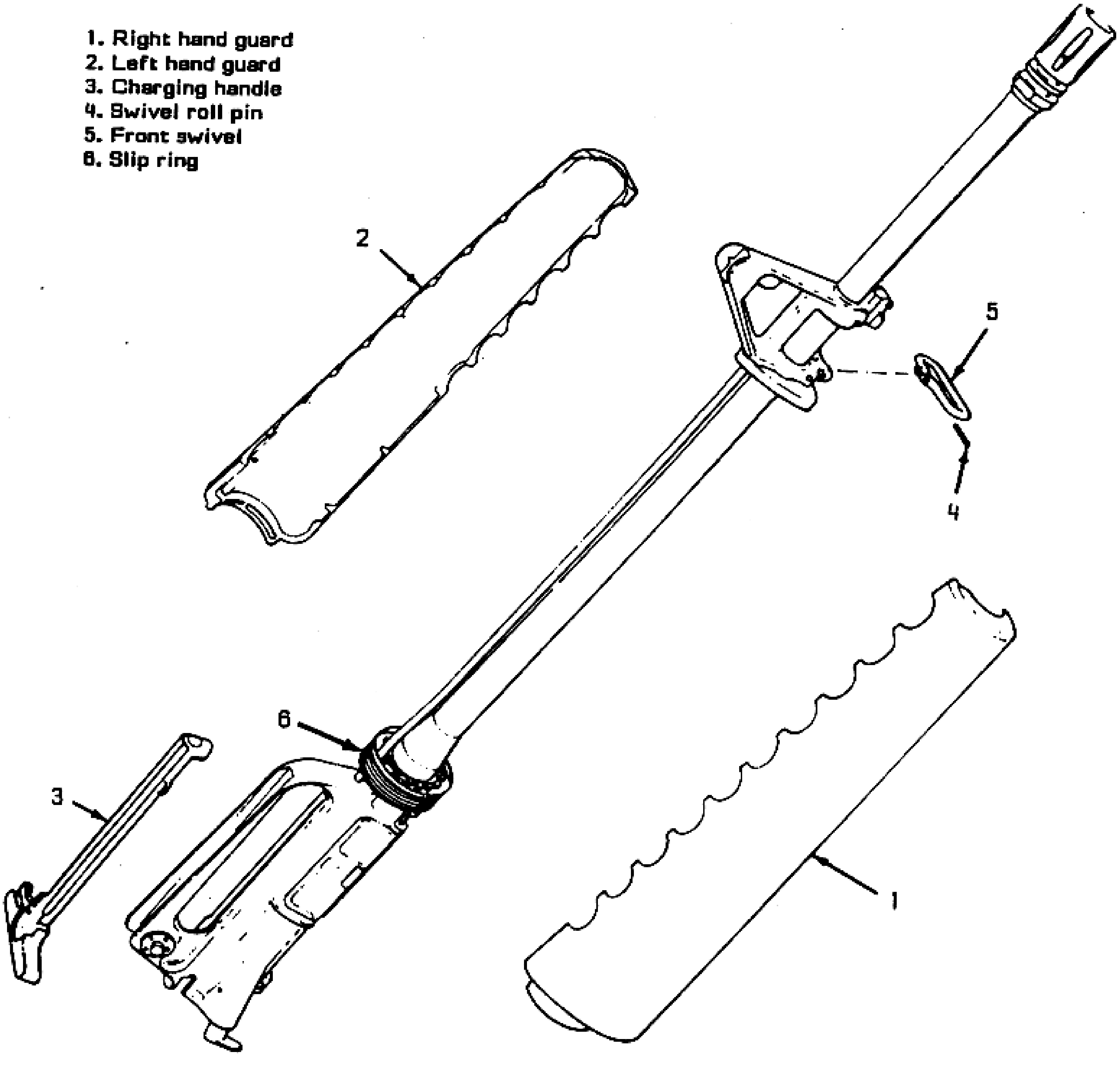
Step 5..... Pull the bolt out the front of the bolt carrier, it is not necessary to disassemble parts 5, 6, 7, 8, 9, and 10.

Reassemble in the M-16 bolt carrier in reverse order.

NOTE... The two allen head key screws are 8 X 32 X 1/4 inch, if you should need to replace them.

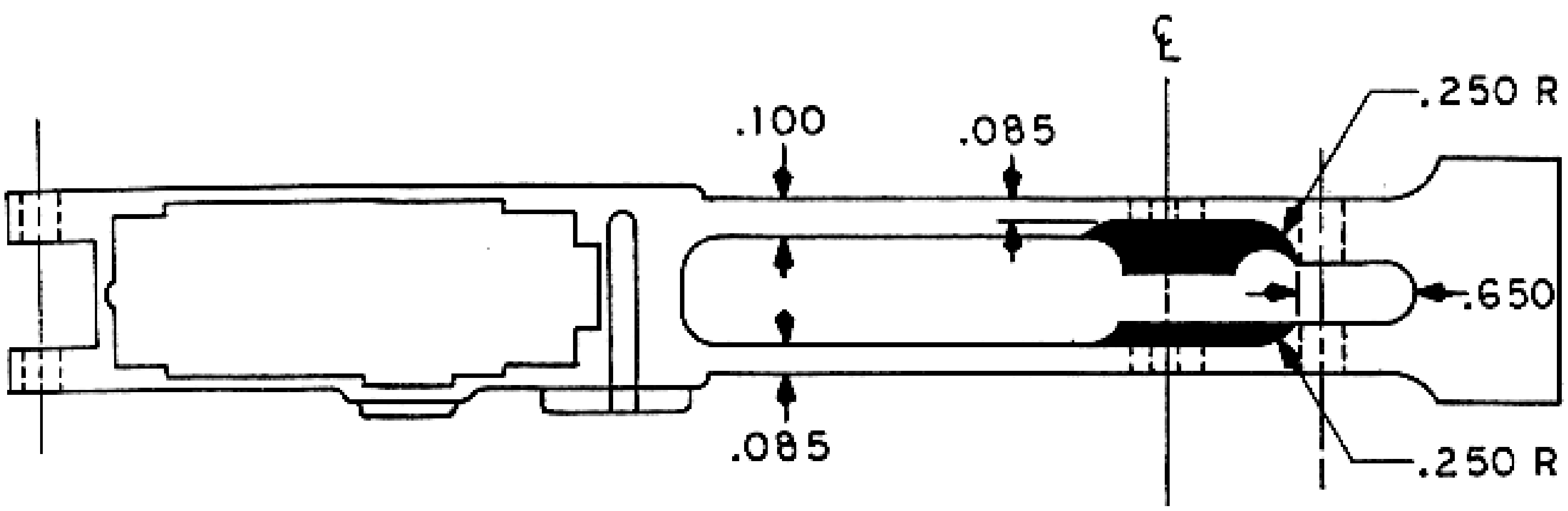
REMOVING HANDGUARDS

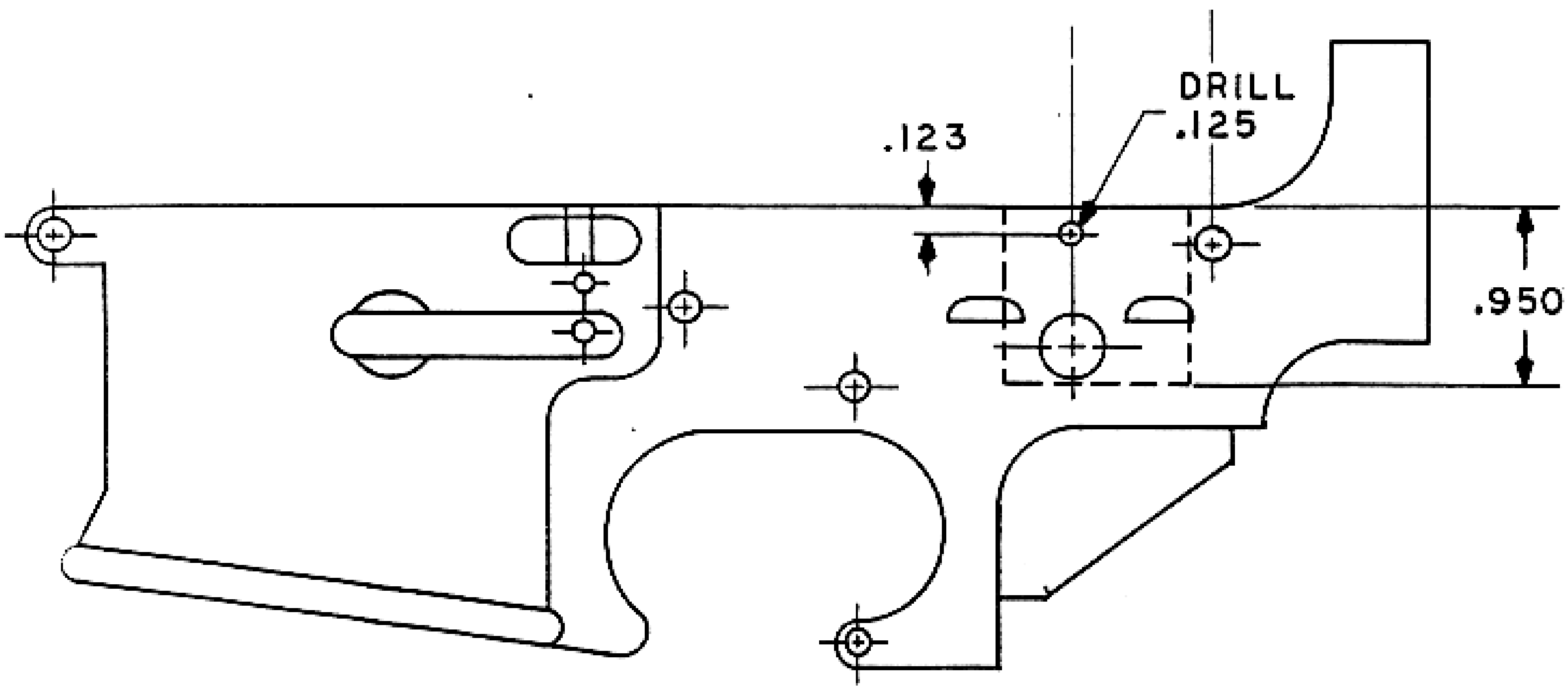
1. Right hand guard
2. Left hand guard
3. Charging handle
4. Swivel roll pin
5. Front swivel
6. Slip ring



Removing the handguards will not be necessary unless you intend to shorten the barrel. If you want them off, pull back on the large slip ring at the front of the upper receiver to release them. Remove one side at a time.

A - TOP VIEW





B - LEFT SIDE VIEW

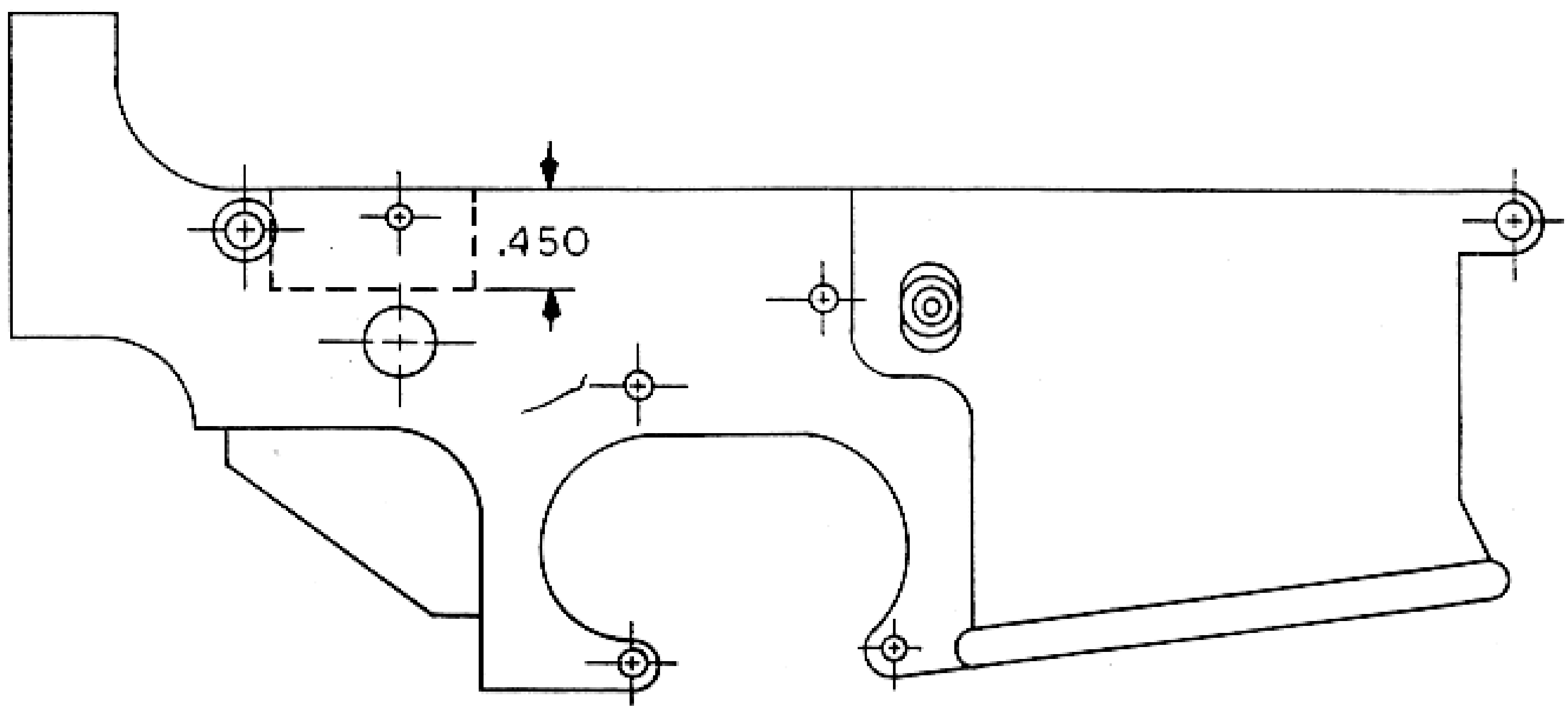
DOING IT TO IT

After removing the upper receiver and barrel assembly, disassemble the lower receiver. The hammer and trigger/disconnector pins come out from the right to the left. Remove the hammer first, then the trigger/disconnector. The selector comes out from the right to the left. To remove, place it half way between the safe and the fire positions. Use a 1/8 inch punch and knock it straight out of the receiver from the right side.

The selector detent plunger and spring are removed from the receiver by taking off the pistol grip.

You will most likely not need to disassemble the lower receiver any further.

C - RIGHT SIDE VIEW



Looking straight down at the top of the lower receiver compare it with drawing (A). The shaded part on the drawing shows the metal that must be removed to make room for the M-16 auto-sear.

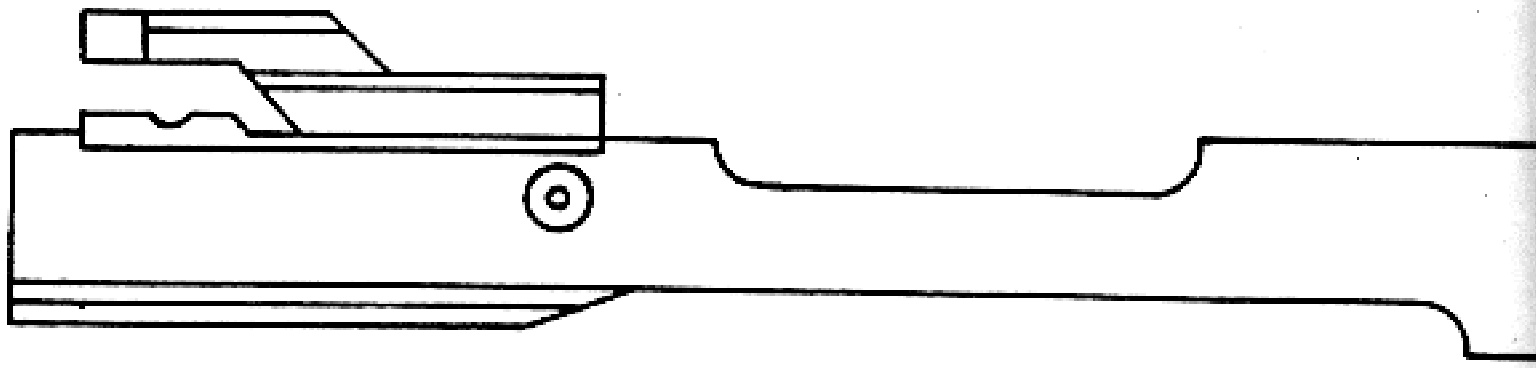
Drawing (B) indicates the metal removed from the left hand side of the lower receiver must be cut out to a depth of .950.

Drawing (C) shows the milling cut on the right side of the lower receiver to be only .450 deep.

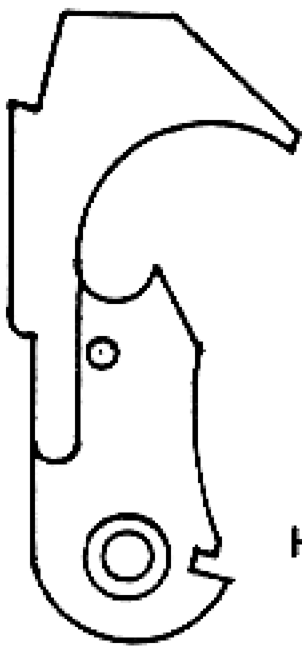
NOTE.....If, like most people, you don't have access to a milling machine, the work can be done using a dremel™ tool, by hand, with a rotary file. (Grinding will work but it would take forever because the aluminum cuttings will load up the stone and it won't cut.)

The next step is to drill the hole for the M-16 auto-sear pin. Refer to drawing (B). This hole is drilled all the way through both sides of the lower receiver. This is best done with a drill press as the hole must be a true 90 degrees from the walls of the receiver.

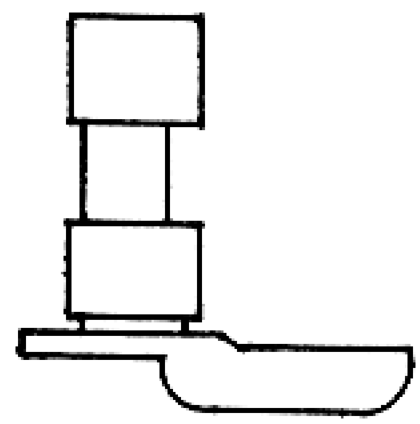
AR-15 PARTS



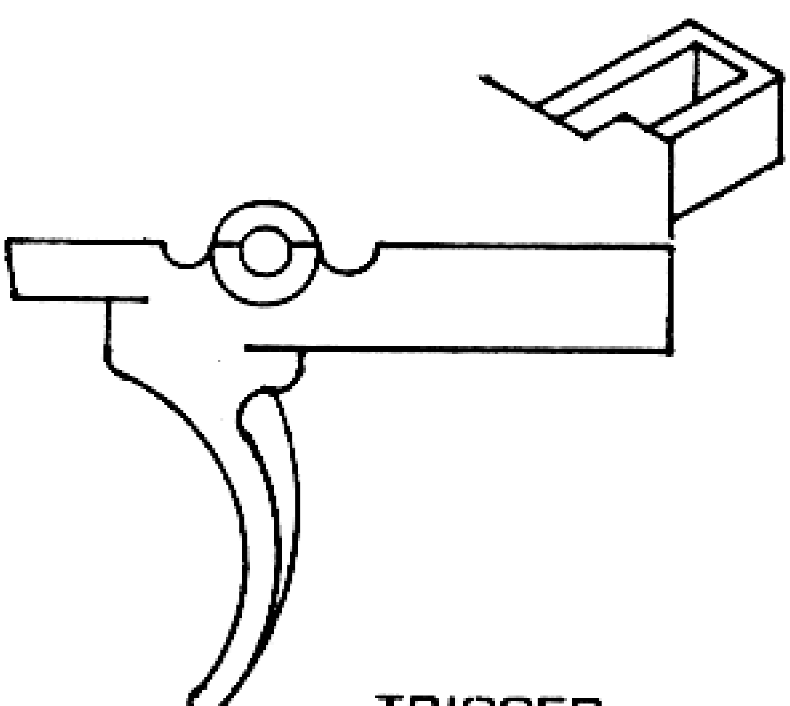
BOLT CARRIER



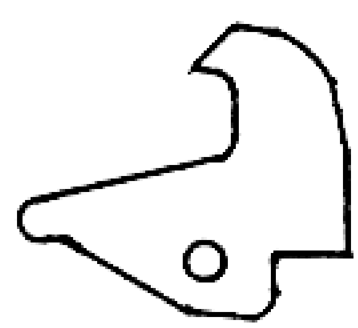
HAMMER



SELECTOR



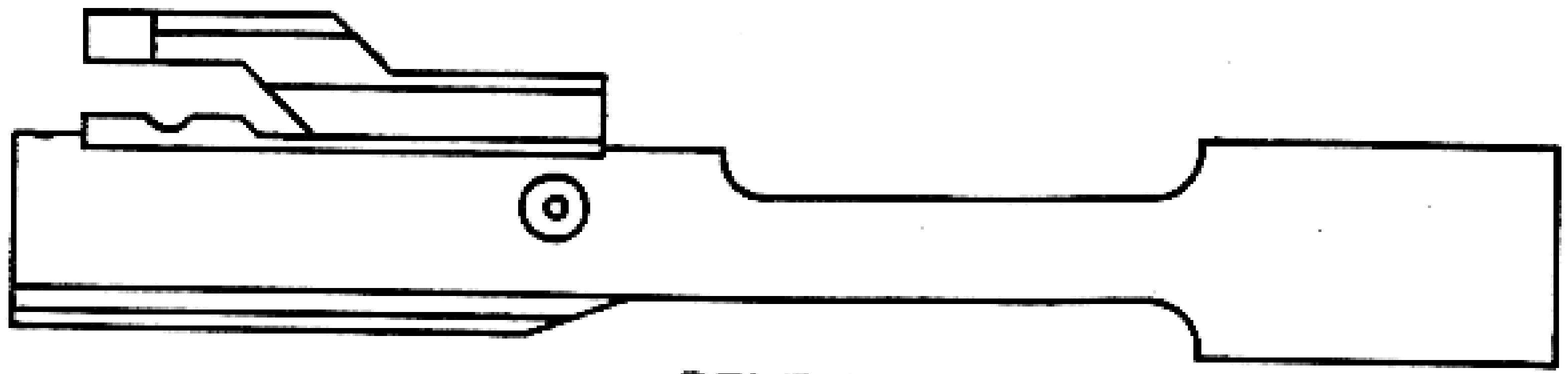
TRIGGER



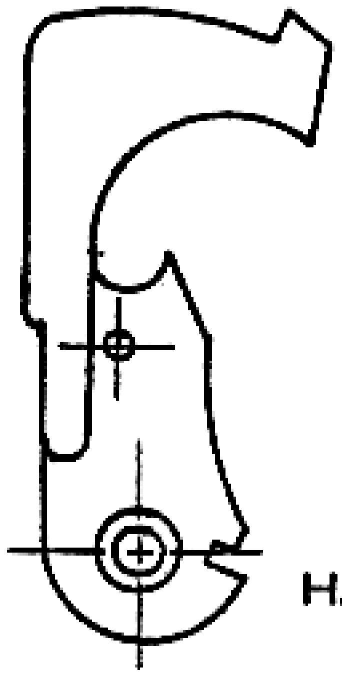
DISCONNECTOR

AR-15 PARTS TO BE DISCARDED

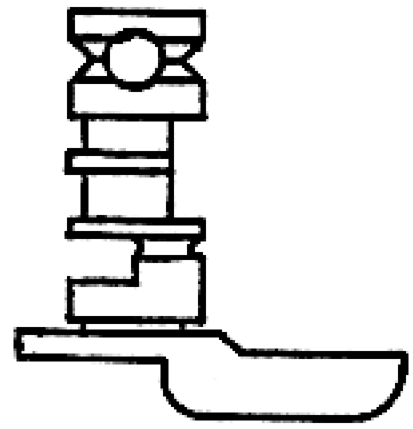
M-16 PARTS



BOLT CARRIER

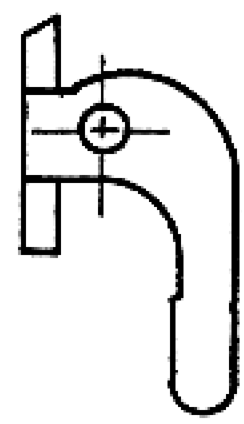


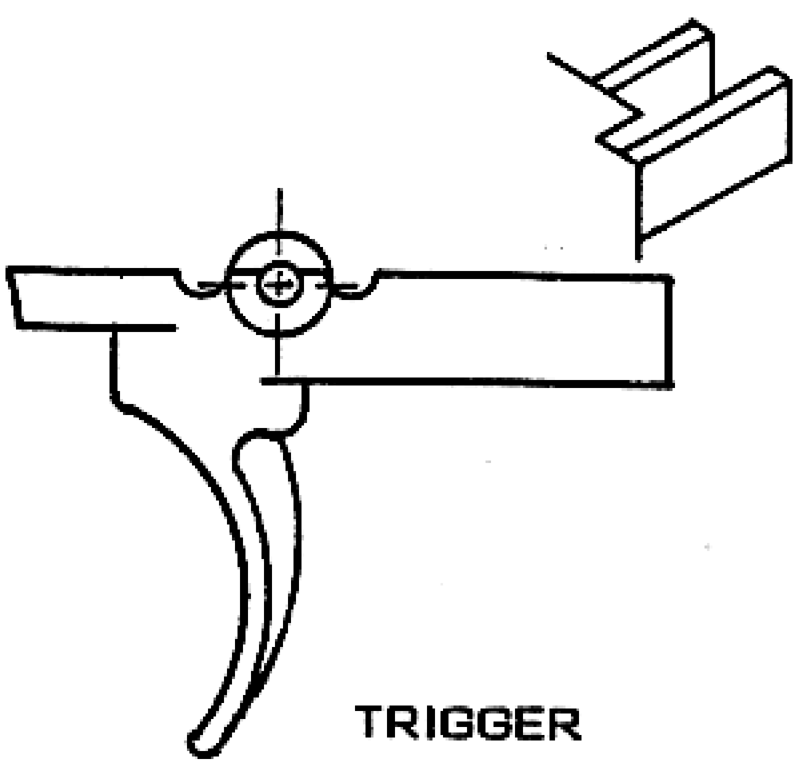
HAMMER



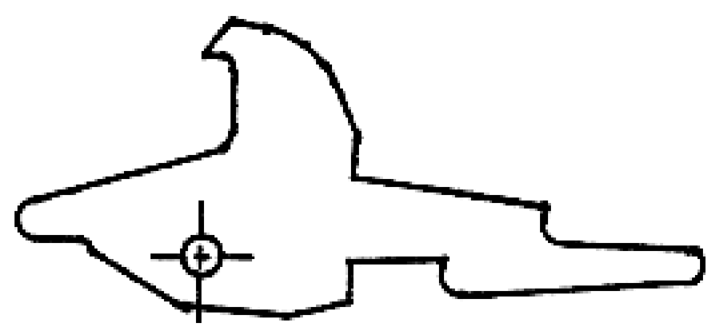
SELECTOR

AUTO SEAR





TRIGGER

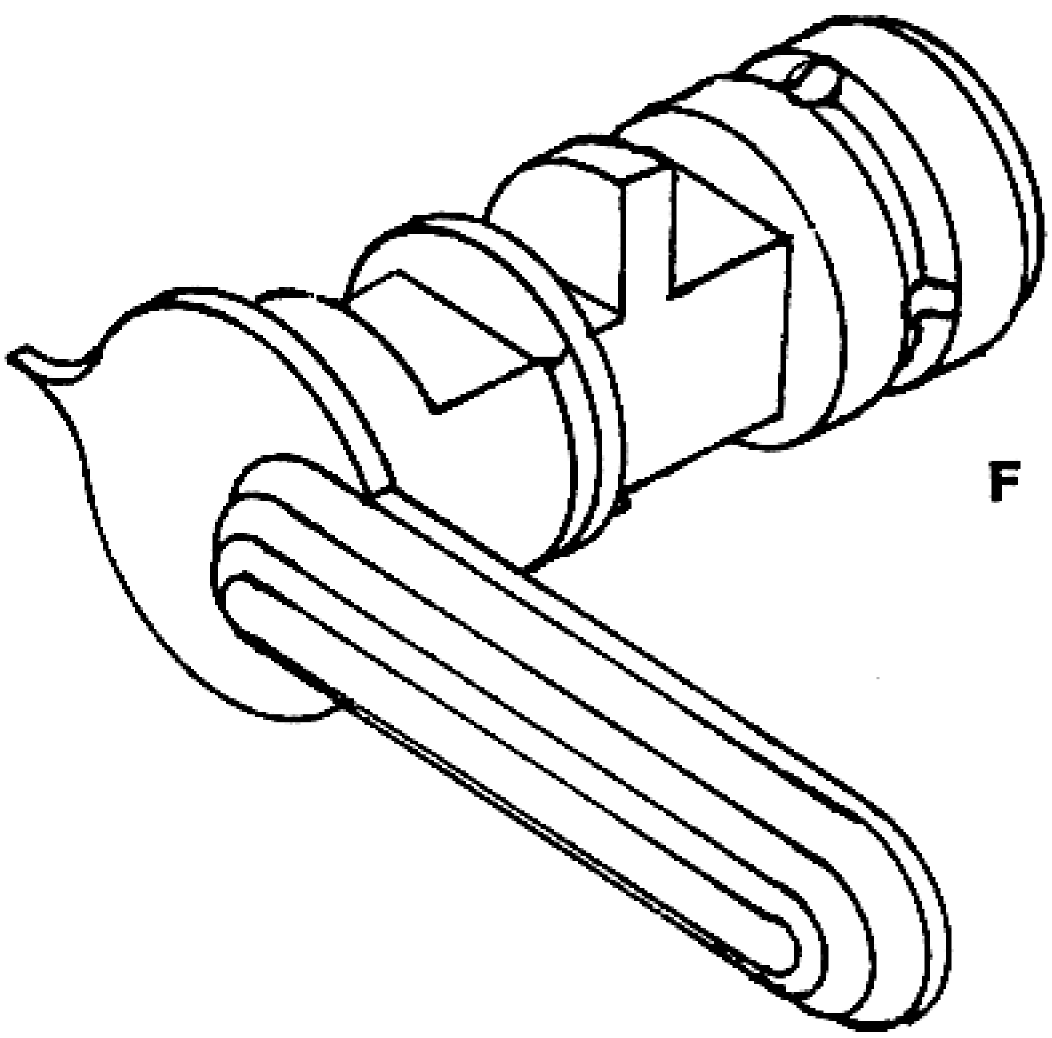


DISCONNECTOR

Comparing the M-16 parts on this page to the AR-15 parts on page 10, the differences become readily apparent.

The M-16 carrier has not had the lower sear contact lip machined short... The hammer for the M-16 has an extended spur, with a notch cut into it... The only difference in the triggers is the M-16 one has been machined through the rear wall... An M-16 disconnector has a long tail... The M-16 selector switch has a third detent position for full-auto, a caming surface for the disconnector and a machined area for the auto-sear tail.

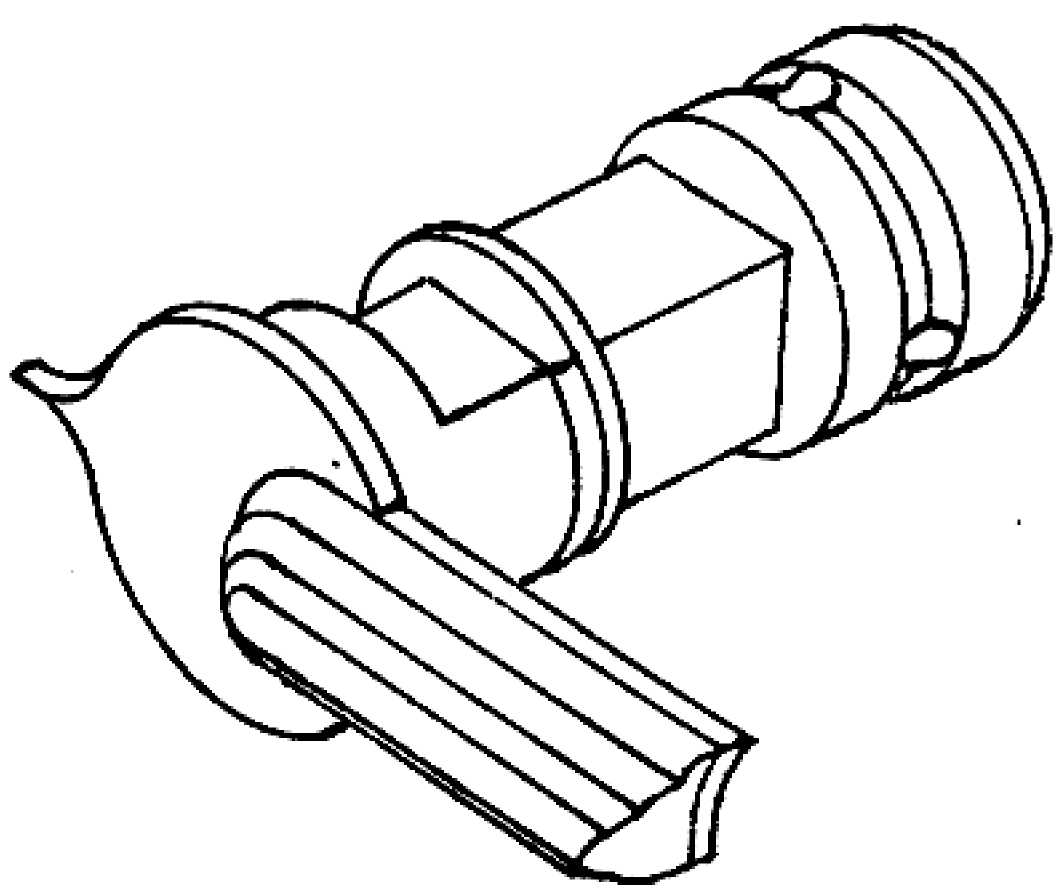
M-16 SELECTOR



F

M-16 SELECTOR

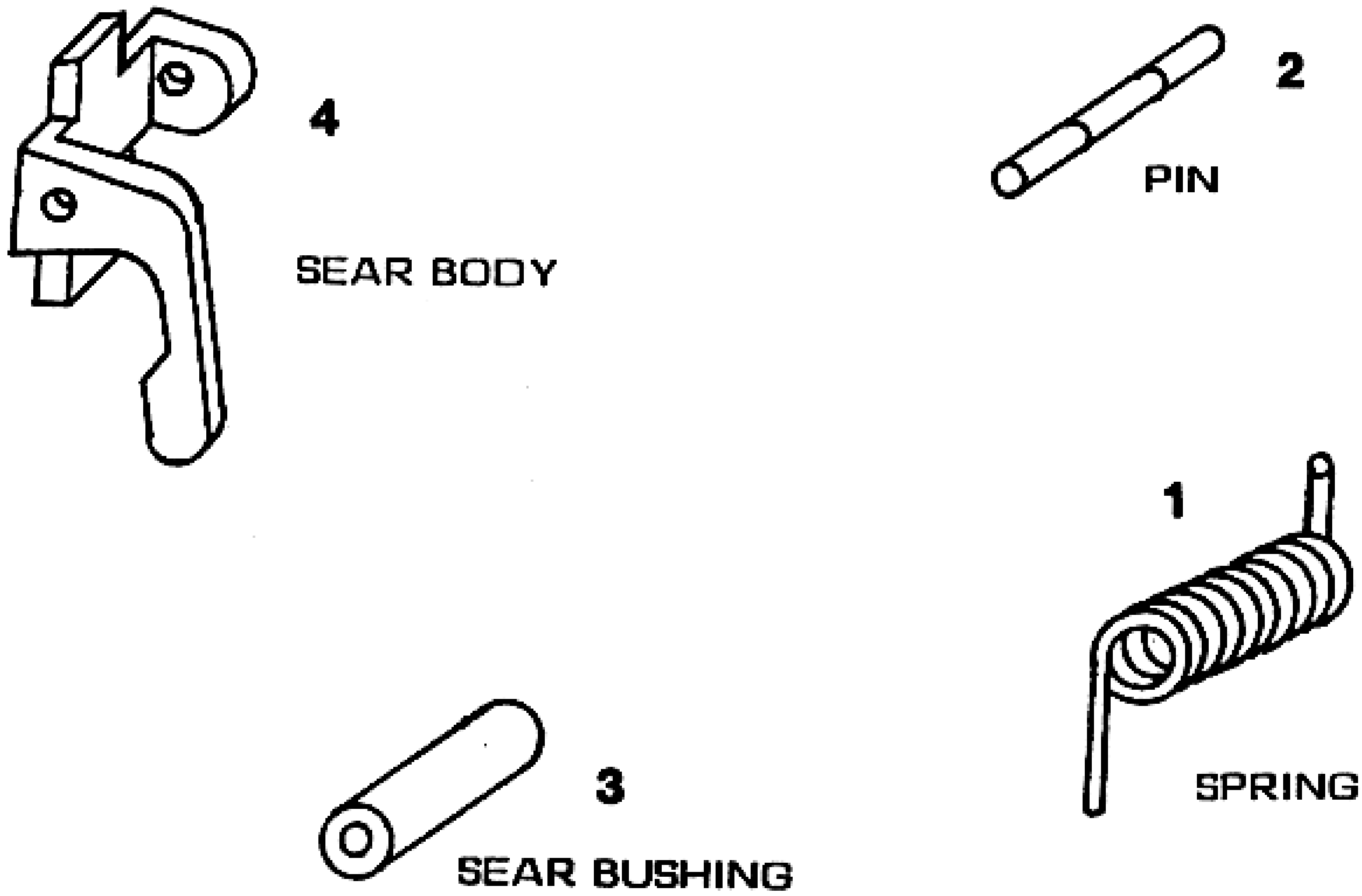
MODIFIED



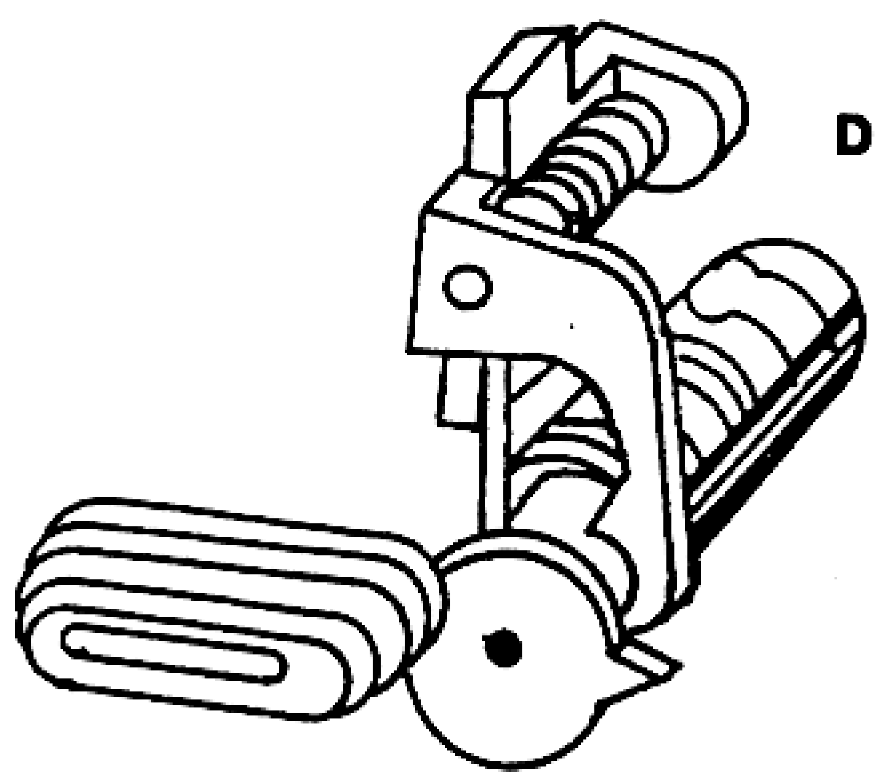
NOTICE

Numerous M-16 parts sets have been sold with an M-16 selector switch that has been altered. If the selector switch you have has had the cam surface removed as shown in the drawing marked modified, it will not work as a full-auto selector. The selector must be unaltered as shown in Drawing F.

MILITARY STYLE M-16 AUTO-SEAR



The military auto-sear in the correct position on the selector switch.



PUTTIN' IT ALL TOGETHER

Reassembly of the lower receiver is next.

For the parts needed to convert the AR-15 to M-16 configuration, other than the M-16 auto-sear arts, refer to drawings page 13, numbers 1, sear spring, 2, sear pin, 3, sear bushing, and 4, sear ody [parts 1, 3, and 4 are normally assembled when you purchase them] are M-16 hammer, isconnector, trigger, selector switch, and bolt carrier, shown on page 11.

The AR-15 parts and their M-16 counterparts are shown on pages 10 and 11.

tep 1..... Install the M-16 Selector.

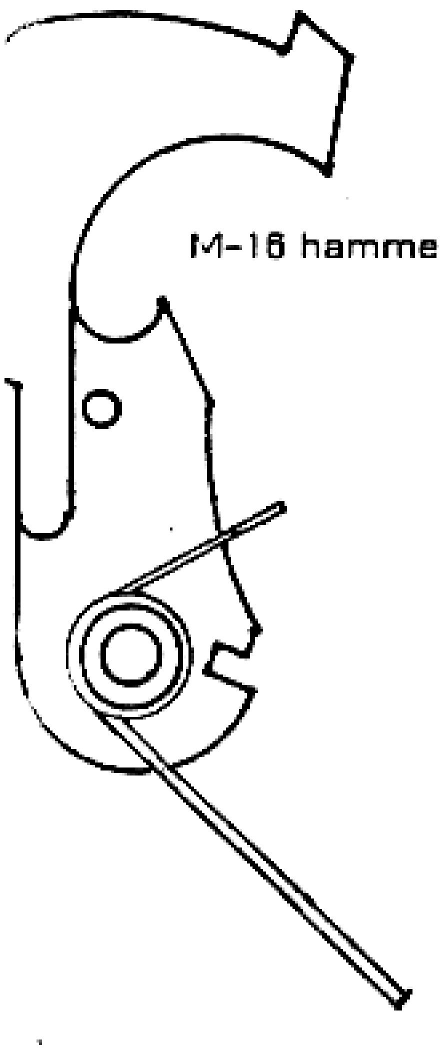
tep 2..... Install the selector detent, detent spring, and pistol grip.

tep 3..... Install the assembled M-16 auto-sear. Refer to drawing (D). NOTE..... Make sure the auto-sear moves freely on its pin and doesn't drag on the receiver walls.

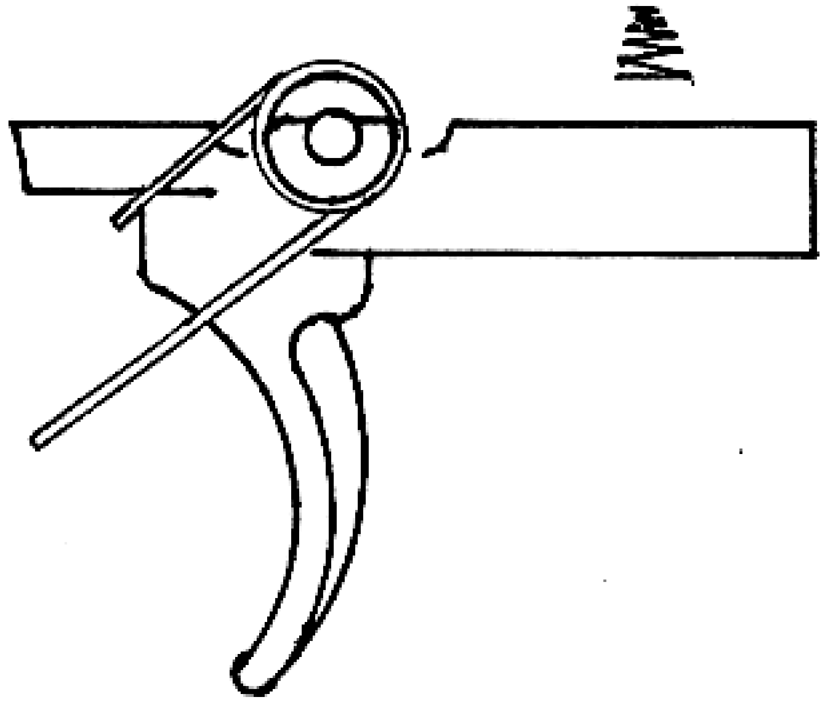
tep 4..... Assemble the trigger, trigger spring, disconnector and disconnector spring outside the receiver using a short 1/8 inch slave pin to hold the parts together.

tep 5..... Install the trigger/disconnector assembly in the receiver. You may need to move the selector from the full-auto to the semi-auto position, and jiggle things a bit to get the trigger/disconnector to slide in place with its tail under the selector switch. When it's all lined up, install the trigger pin from left to right, driving the slave pin out of the receiver. NOTE..... The legs of the trigger spring should be pointed to the front of the receiver and resting on the bottom.

tep 6..... Install the M-16 hammer and hammer spring. The legs of the hammer spring point to the rear of the receiver and rest on the coils of the trigger spring when it's installed correctly. The trigger pin goes in from the left to the right.

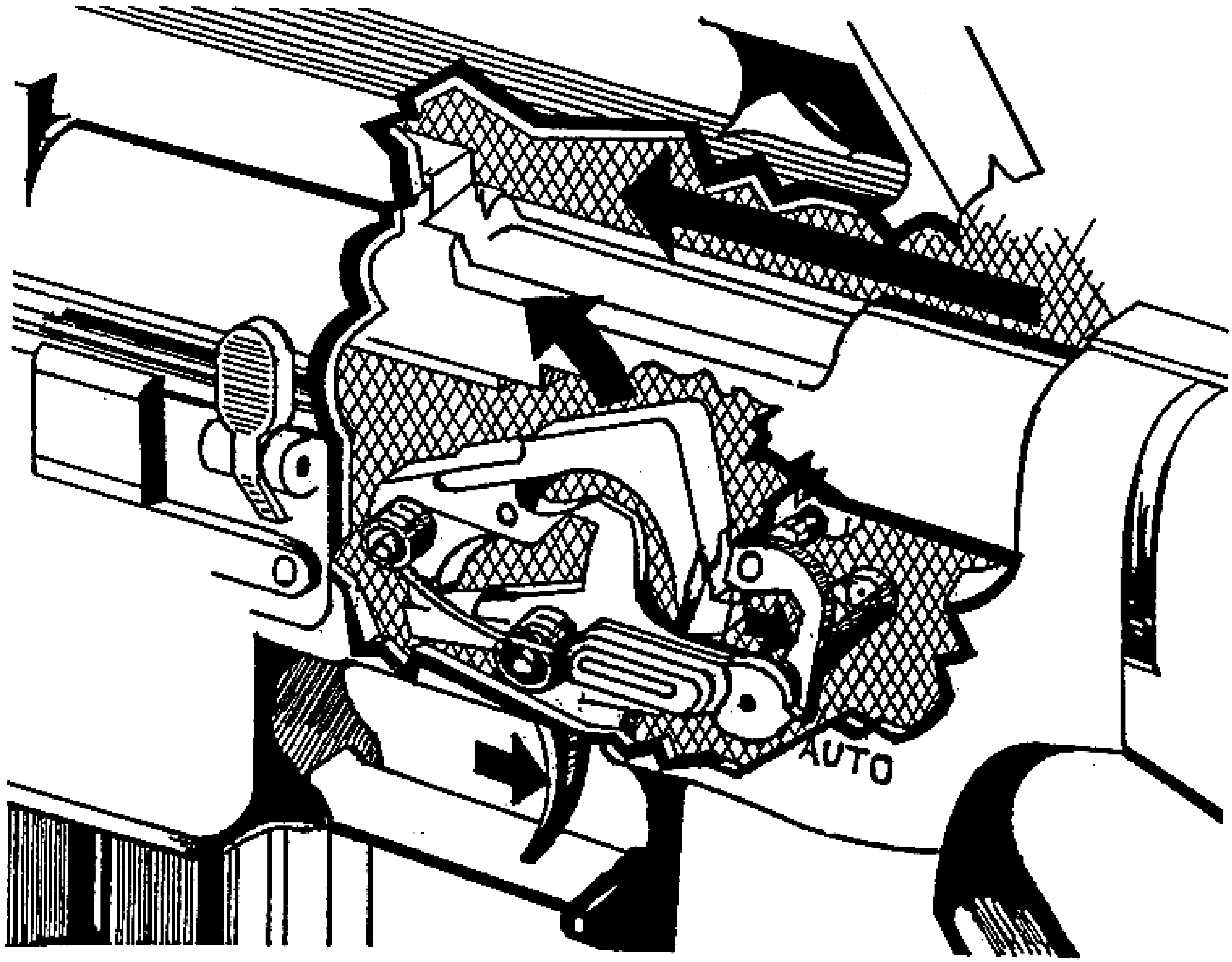


M-16 hammer with spring installed correctly.



M-16 trigger with spring installed correctly. The disconnector spring fits into the trigger with he large end down.

THE WAY IT WORKS



TESTING FOR FUNCTION

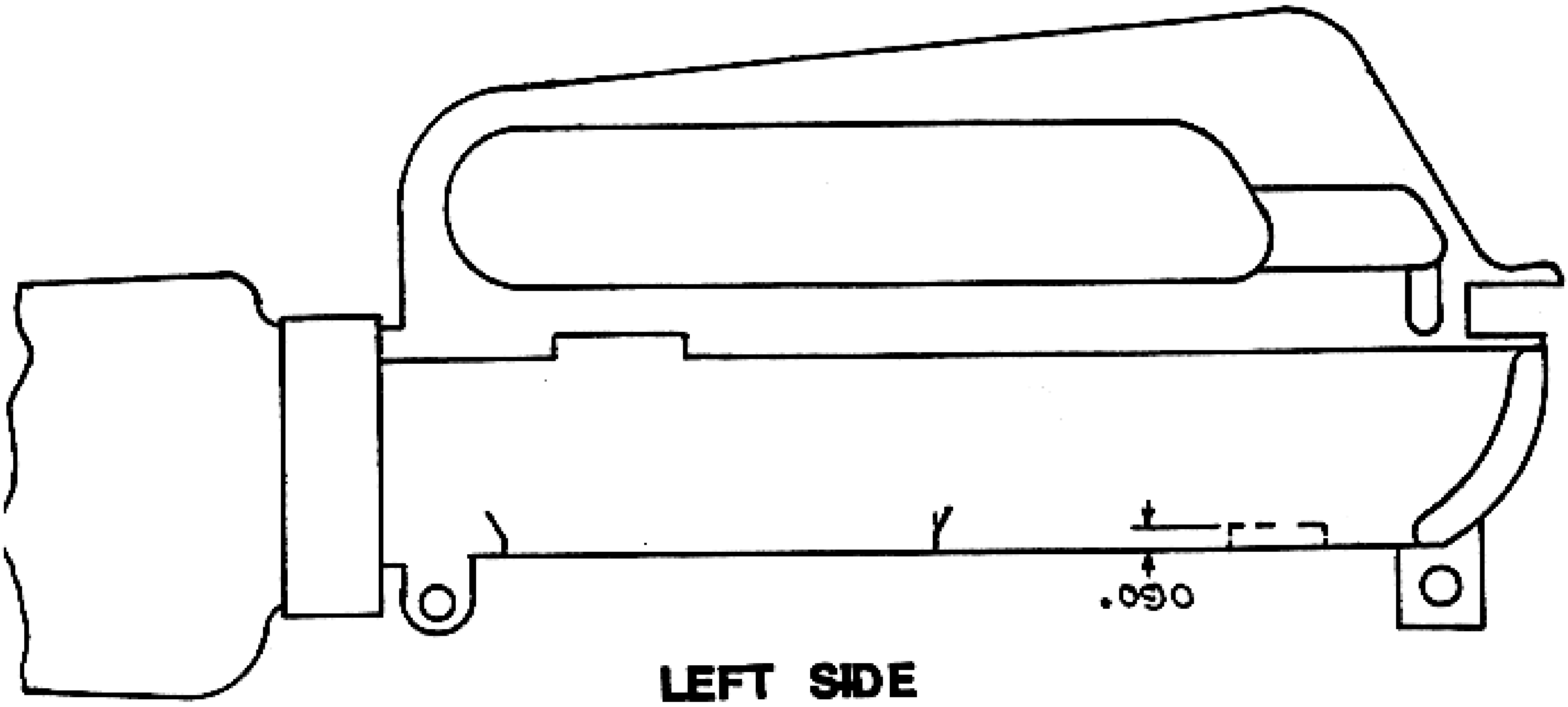
Step 1..... Cock the hammer, place the selector in the safe position. Pull the trigger, the hammer should not fall.

Step 2..... With the selector in the semi-auto position, pull the trigger, the hammer should fall. Keep holding the trigger to the rear, recock the hammer and release the trigger. The hammer should release from the hammer hook and reengage in the hammer sear. NOTE..... The hammer should not fall from this position until you pull the trigger again.

Step 3..... With the selector in the full-auto position, pull the trigger, the hammer should fall. Hold the trigger to the rear and recock the hammer. The hammer is now caught under the auto-sear. Still holding the trigger to the rear, push forward on the top of the auto-sear. The hammer should fall. Still holding the trigger to the rear, recock the hammer, release the trigger, then push forward on the top of the auto-sear. The hammer should fall only to the sear engagement.

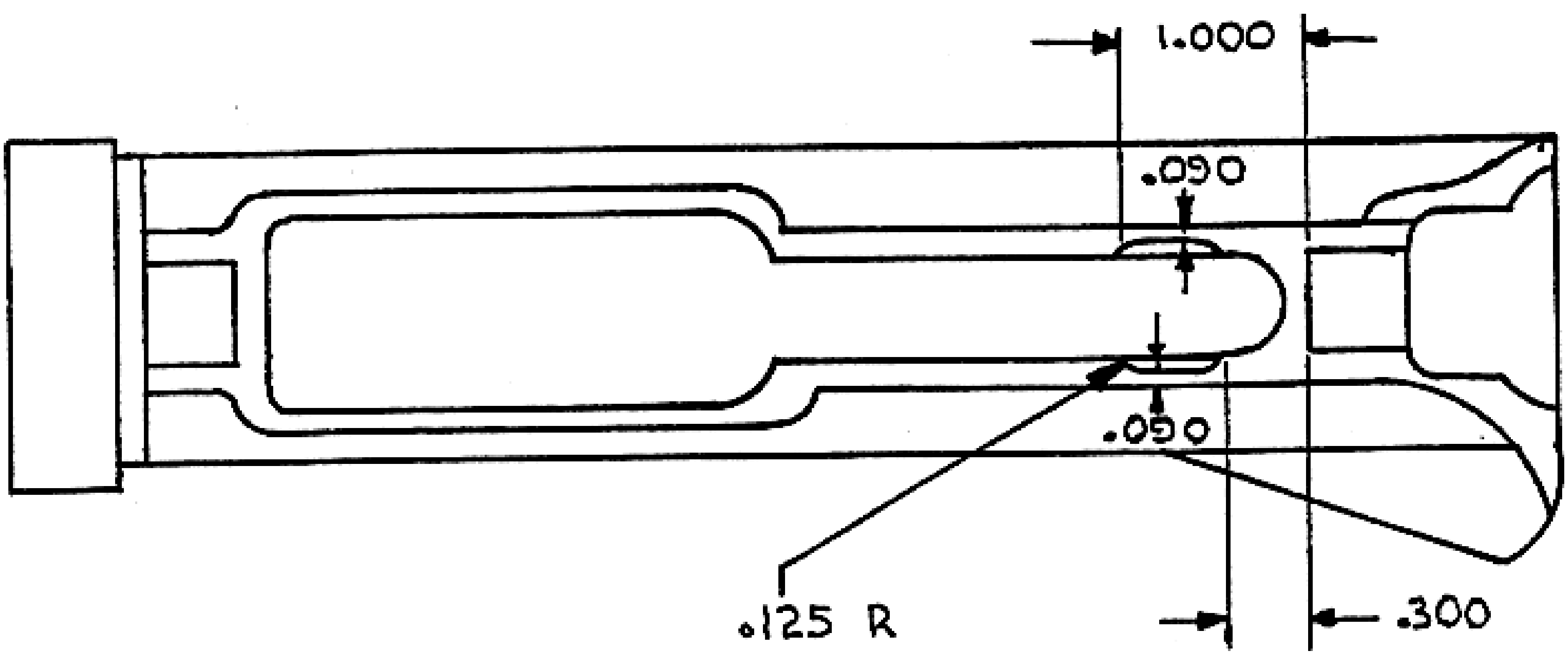
Step 4..... If you understood steps 1, 2, and 3 the first time you read them, and everything worked as it should, put the lower receiver to one side, have a shot of bourbon, pat your sweet thing on the fanny and get ready to start on the upper receiver.

THE LAST CUT



LEFT SIDE

E



BOTTOM

THE LAST CUT

The upper receiver needs a clearance cut machined into it. Refer to drawing (E). The purpose f the cut is to clear the shoulders of the auto-sear which protudes about .050 above the top of ne lower receiver walls. Whether you mill, rout, file or grind this clearance, makes no difference. s long as you make sure the auto-sear will not rub.

TEST FIRE

You may think, after reading this part that I'm a real nit picker. All I can say is, this is the way I do it and I still have my eyes, ears and most other needed parts, wear shooting or safety glasses and use ear protection. Test fire with factory ammunition only.

Step 1,.... Load one round in the magazine, insert the magazine, chamber the round. With the selector in the semi-auto position, fire the one round.

Step 2..... Is the same as step 1, except load two rounds.

Step 3..... The same once more, but this time load and fire five rounds.

Step 4..... Load two rounds, place the selector on full-auto, and fire them.

Step 5..... The same as step 4, except load and fire five rounds.

If all is well, no problems and the fired brass looks good (no bulges, no popped or flattened primers or other signs of trouble), load a twenty or thirty round magazine and ROCK AND ROLL!!

NOTES

CHAPTER TWO

BOLT CARRIER CONVERTER

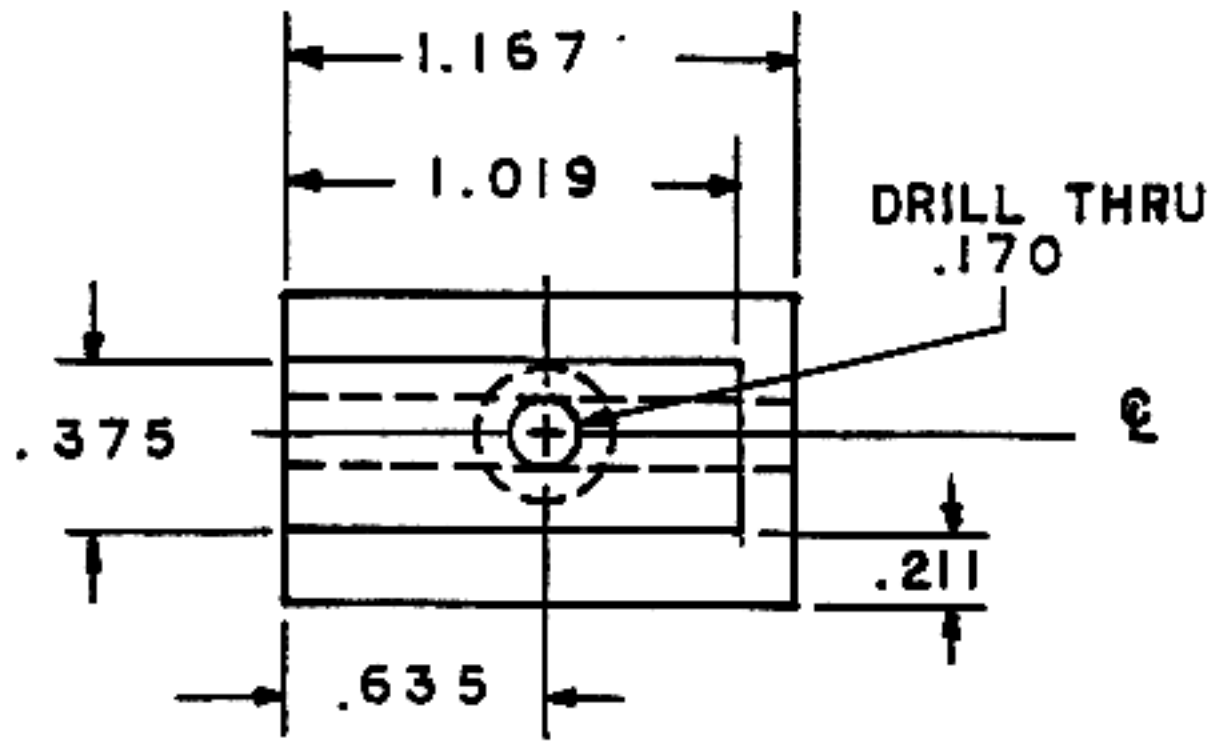
The bad news is: the days of inexpensive M-16 bolt carriers is a thing of the past.

The good news is: with a little work the AR-15 carrier can be modified to M-16 specifications.

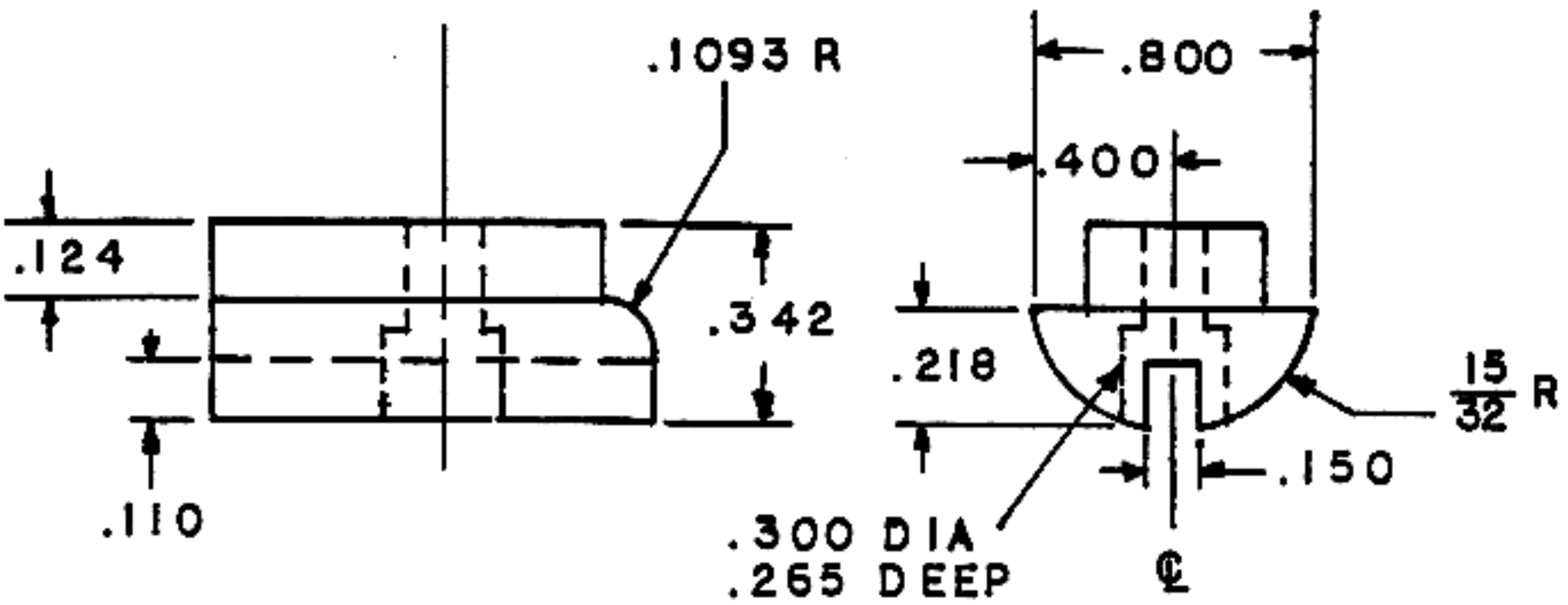
The only difference between the two carriers is that the AR-15 has had the area that trips the auto-sear machined off.

By manufacturing the bolt-on adapter shown in the drawings, the AR-15 bolt carrier can be adapted for use in a machinegun.

You not only save fifty or sixty bucks, you can also keep the old lady happily busy for two or three days filing the part out of that old piece of railroad rail you bought at the flea-market, (and she thought it wasn't good for anything).



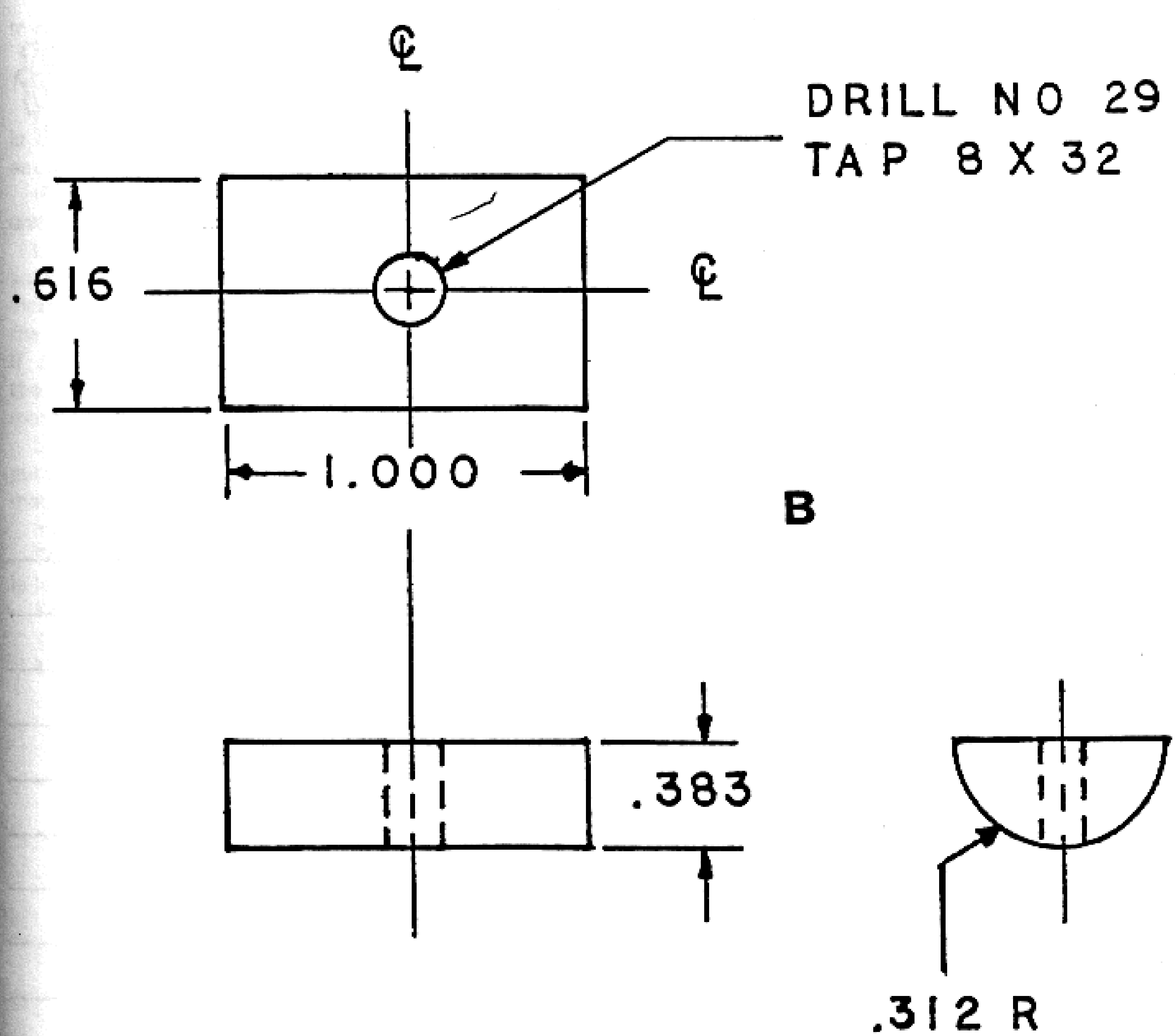
A



CONVERTER TRIP

The carrier converter can be made from low carbon steel and case hardened, using a product like Kasenit® surface hardening compound. NOTE..... Complete hardening instructions come with Kasenit®. Better yet, build the parts from oil hardening carbon steel drill rod. This can be hardened with a torch by heating the part a bright cherry color and immediately dropping the heated part in 10 WT. motor oil. WARNING..... Do this outside, because you're going to get some smoke.

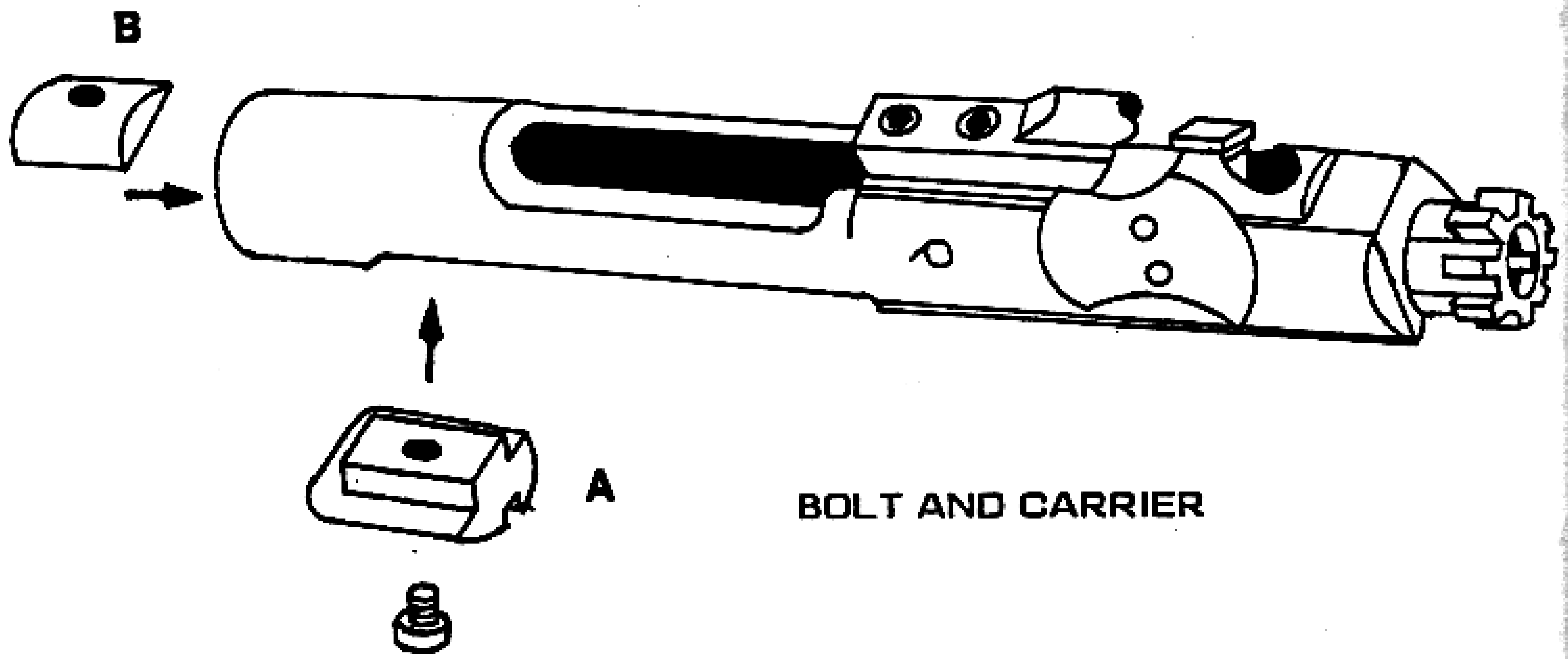
To temper the parts after hardening, place in your kitchen oven at 500 degrees for one hour. Let the parts cool in the oven with the door closed. DANGER..... DO NOT USE A MICROWAVE!



CONVERTER NUT

PUTTIN' HER TOGETHER

Part (B) fits inside the bolt carrier. it acts as a nut. Part (A) is the trip. It fits at the bottom rear of the carrier. Use a 8 X 32 X 9/16 long hex head bolt to hold the parts together.



BOLT AND CARRIER

NOTES

CHAPTER THREE

DROP-IN AUTO-SEAR

I don't like drop-in auto-sears! Not because they don't work, because they do. They not only work, but in my experience an AR-15 equipped with a drop-in auto-sear works as well as an original government issue M-16.

The problem's not with the auto-sear, it's with the laws governing its use.

The drop-in auto-sear was designed in the mid 1970's for the sole purpose of converting the AR-15 to fire full-auto (select fire).

If you buy a drop-in auto-sear that was manufactured after November 1st, 1981, it is by itself classified a machinegun, and must be serial numbered and registered with B.A.T.F. as such. If it was manufactured before then, it in itself is not a machinegun. Of course, if you put it in your AR-15 then it is a machinegun, and as such is illegal, because although it was manufactured before, but not registered before midnight May 19, 1986 it can not be registered after that date.

Also, for the drop-in auto-sear to work in the AR-15 you need an M-16 hammer, disconnector, trigger, selector switch, and bolt carrier.

If you have all of the above listed parts BUT NO GUN, under federal law you have a machinegun. That may sound crazy, but that's the law.

The fact that a post November 1st, 1981 drop-in auto-sear must be registered as a machinegun is bad news. If you bust it, to get your gun working again you must not only buy a new one for anywhere from two to three hundred dollars, you must also pay the $200.00 tax on the new one.

If that's not bad enough, if you should lose it, you have lost a machinegun and B.A.T.F. gets very unhappy about that.

One last thing about using the drop-in auto-sear. With the sear removed from the weapon, you would think you once more have a legal semi-auto firearm. NOT SO! With the necessary M-16 parts installed, if you put the selector on full-auto the disconnector will not work. The hammer will follow the bolt forward if you hold the trigger back. This causes what is knows as slap fire and is dangerous. If the bolt has not locked before the cartridge fires you will have one hell of a blast coming out the ejection port. That's bad, but worse is yet to come. B.A.T.F. has ruled, if a weapon will fire more than one shot with each pull of the trigger, it's a machinegun.

Even though you believe you did everything right and paid the tax on the drop-in auto-sear, by putting the other M-16 parts in your AR-15, you have unwittingly manufactured an unregistered machinegun.

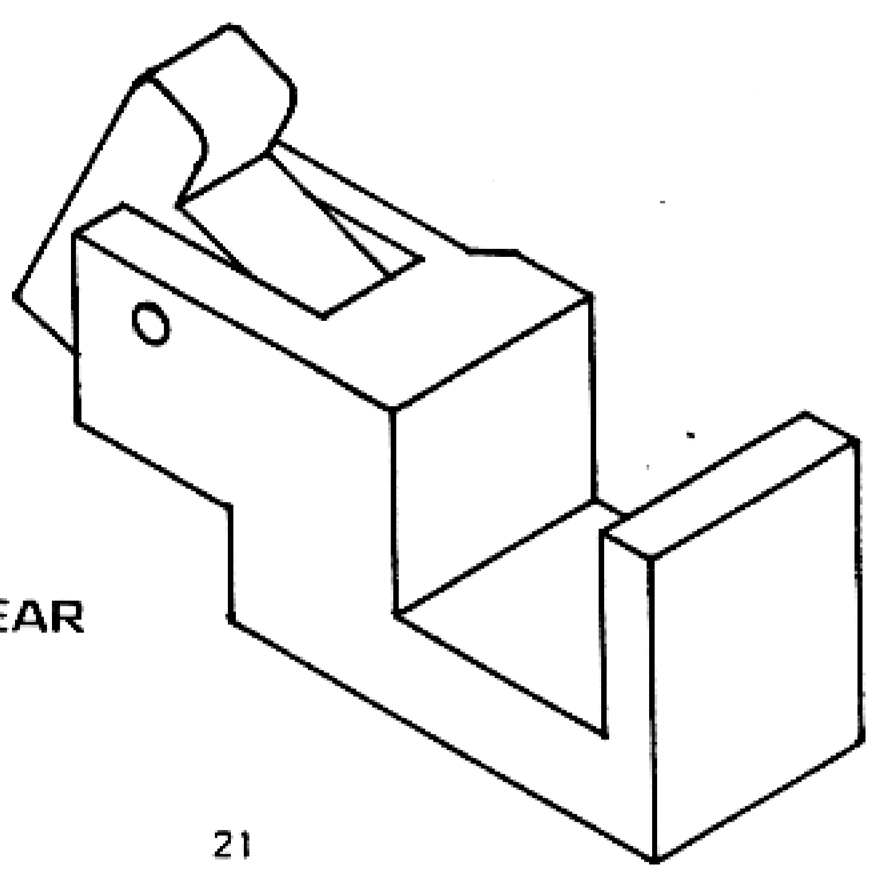
You would at that time be liable for a fine and imprisonment.

TO RECAP: to buy a registered post November 1st, 1981, drop-in auto-sear from a Class III dealer is legal.

To have an AR-15 with M-16 parts installed is illegal

To have M-16 parts although you have no gun is illegal.

To have an unregistered drop-in auto-sear is illegal.



DROP-IN AUTO SEAR

PARTS IS PARTS

The four parts of the drop-in auto-sear are a pretty straight-forward proposition.

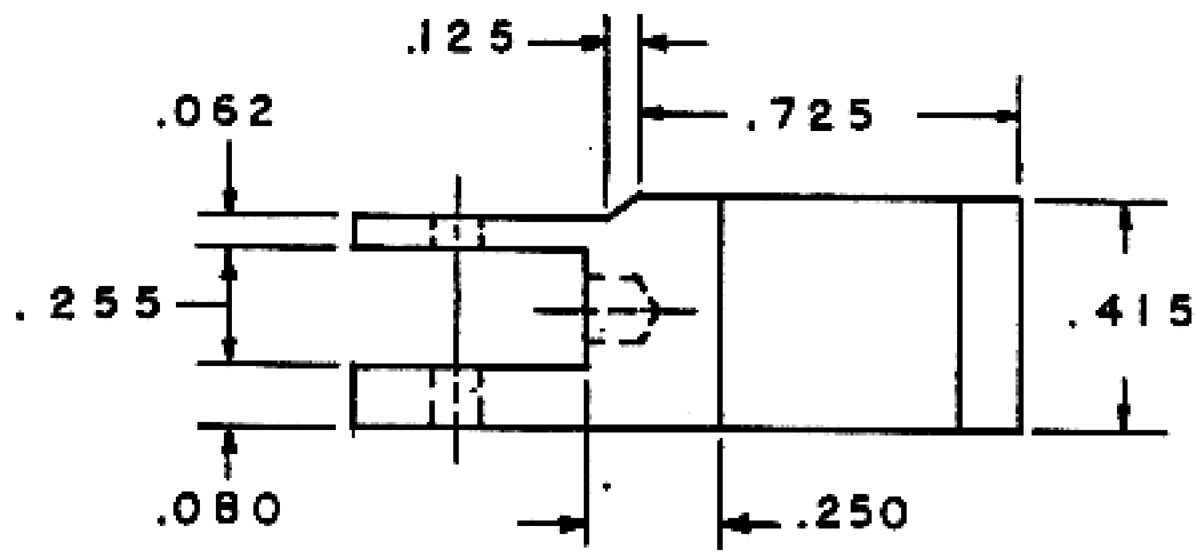
The sear housing can be made from either mild steel or aluminum. The housing bears very littl stress, so a hardened housing is not needed.

The sear trip is another story. This is the part of the drop-in sear that takes the beating. It n only catches the hammer in a cocked position. It also is struck with the full force of the bolt carri each time the weapon cycles. Firing at a rate of 750 rounds a minute, it takes a real beating.

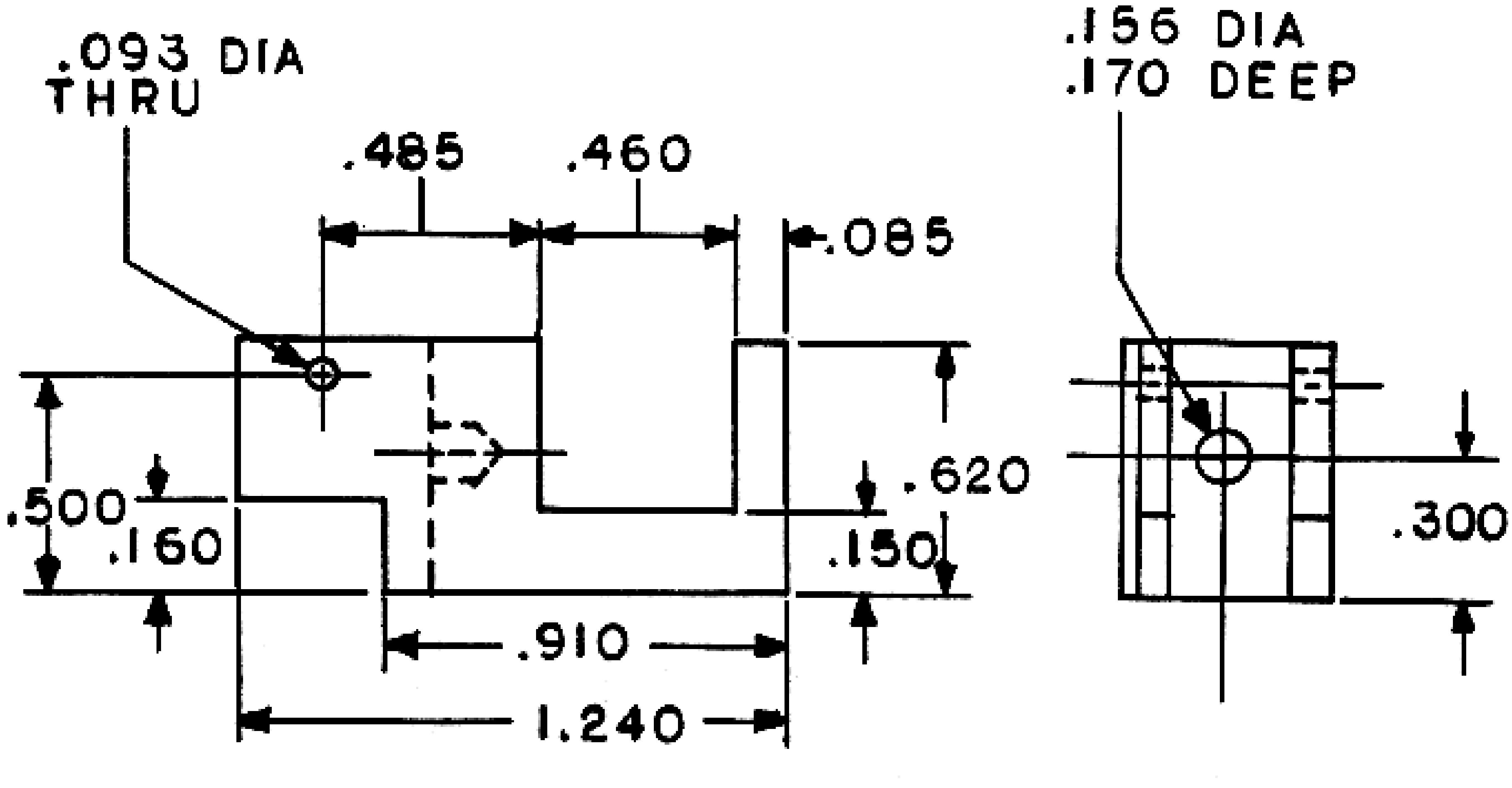
Manufacture the trip from high carbon oil quenching steel.

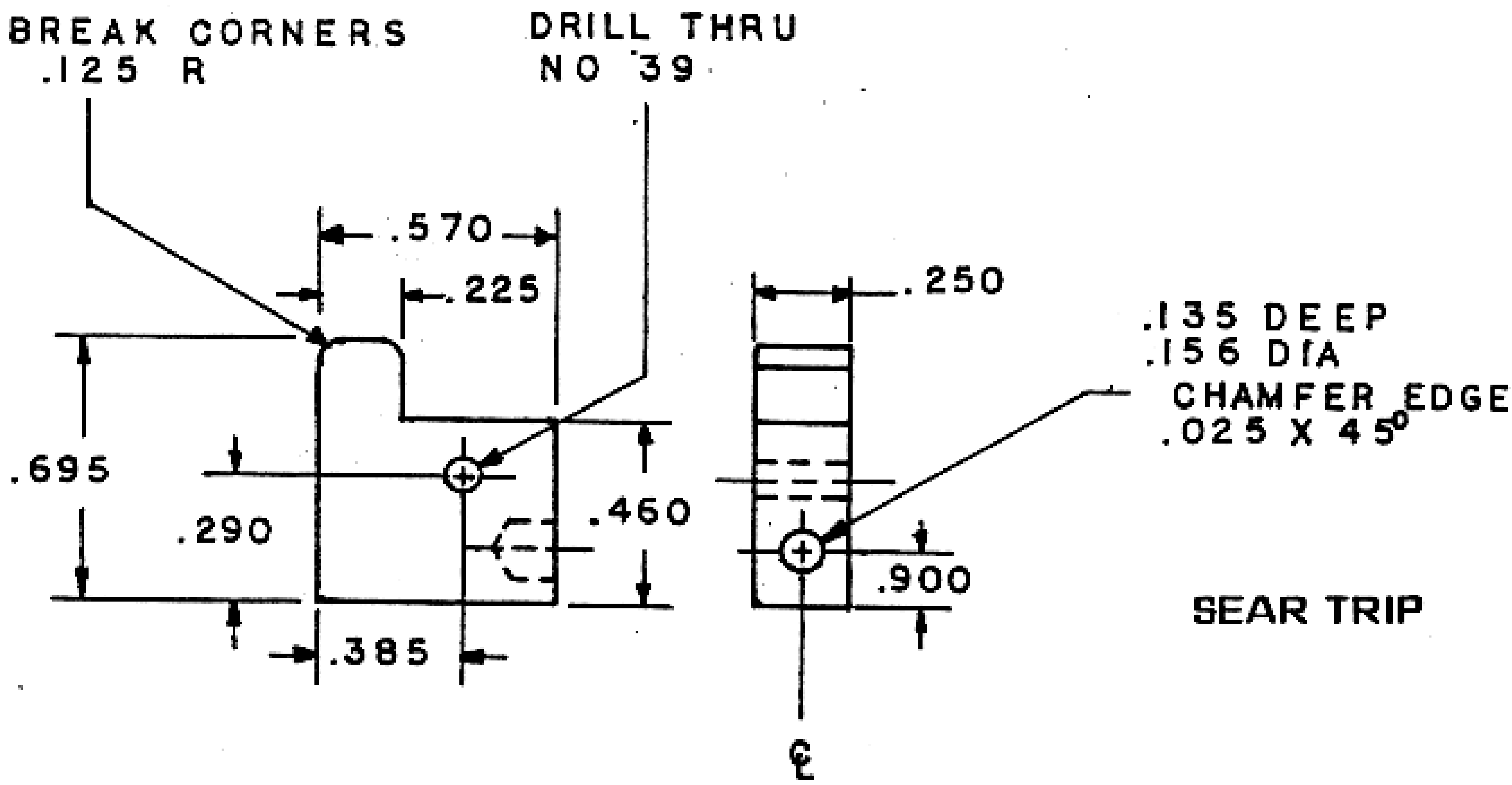
It can be hardened by heating it a bright cherry red with a torch and dropping it immediately int 10 wt. motor oil. This is best done outside because of smoke from the oil.

To temper the part after hardening, place it in your kitchen oven for one hour at 500 degree Let it cool with the oven door closed. WARNING.....DO NOT USE A MICROWAVE!



SEAR HOUSING



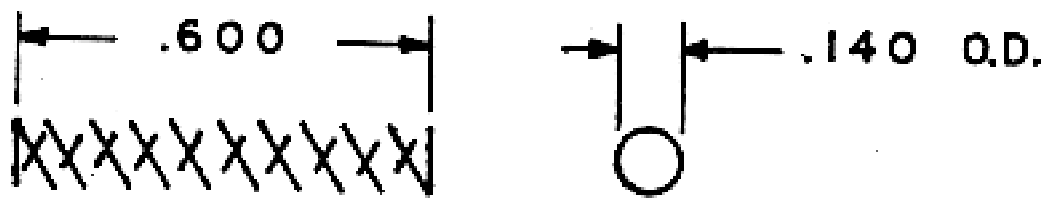


SEAR TRIP

The spring is made from No. 18 wire. Wind it around a mandrel that has been turned on a lathe. You will have a spring exactly like the one shown in the drawing.

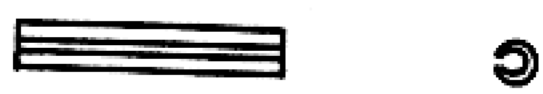
OR

Find a hunk of spring that fits in the hole at the front of the sear body without dragging, chop it off at the right length, and call it a job well done.



10 TURNS NO. 18 MUSIC WIRE
RATE: 8 lbs/in

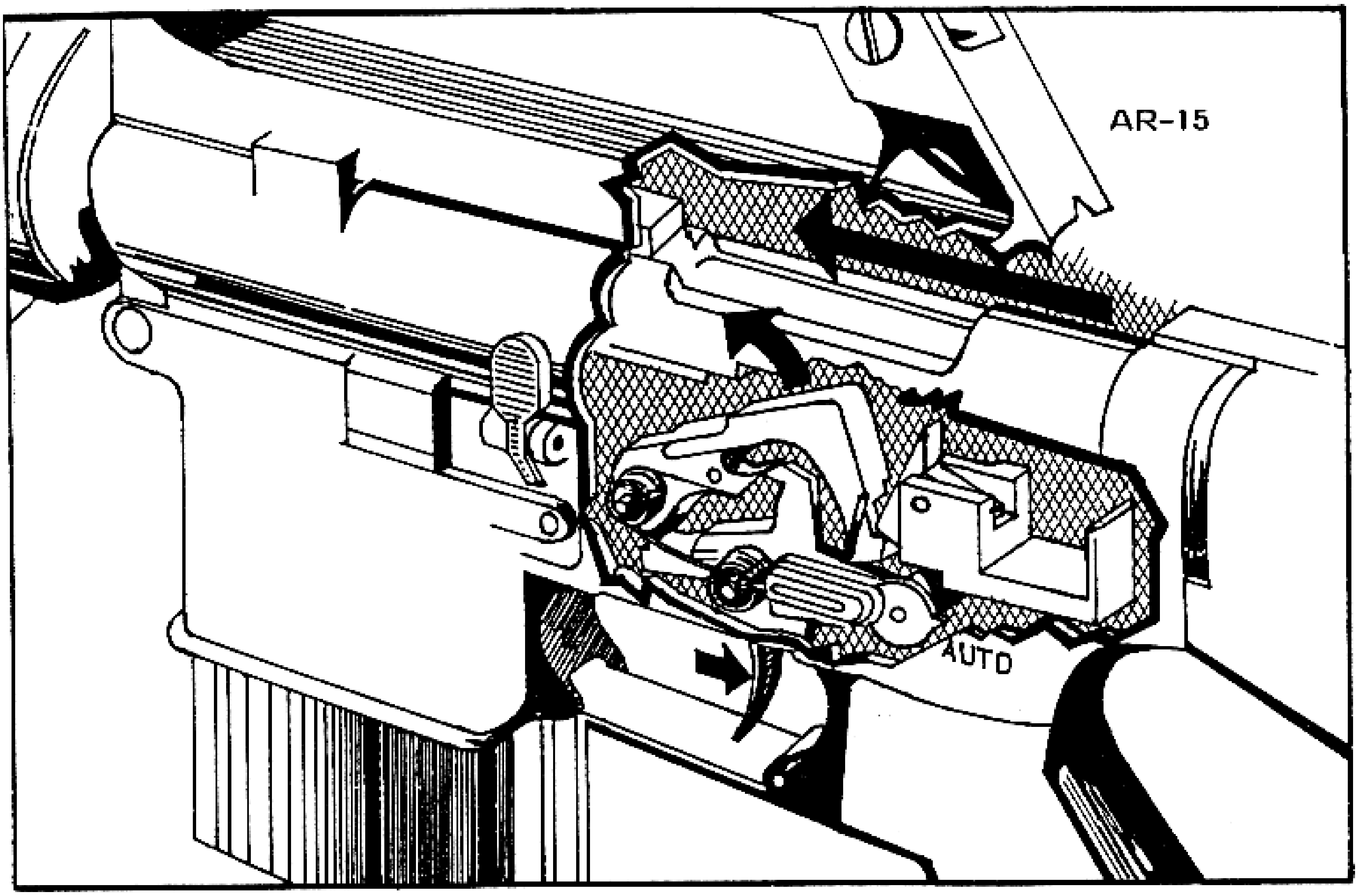
The trip pin can be made from drill rod stock. Although I find a roll pin works as well without the need for a precision fit in the sear housing.
Whichever is used, make sure the trip rocks freely on the pin when it's assembled.

ROLL PIN 

.093 X .375

TEST FIRE

Test fire as outlined at the end of CHAPTER ONE.



AR-15 WITH DROP-IN AUTO-SEAR

NOTES

CHAPTER FOUR

LIGHTNING LINK

This thing's as slick as owl do! do! No worries about M-16 parts. No machining or drilling on a six hundred dollar gun.

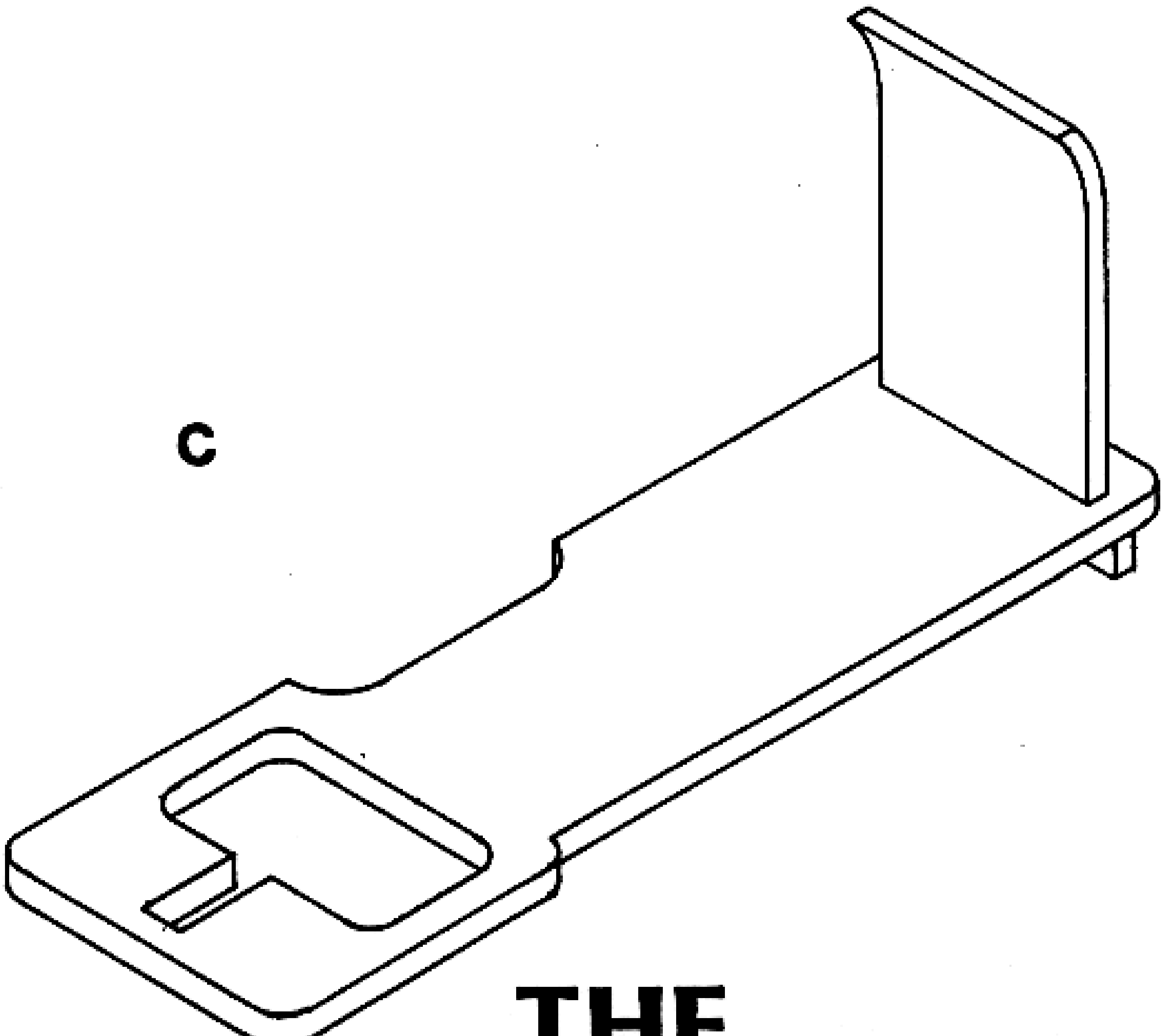
The parts can be made from tool steel, machined with great precision, hardened and tempered with loving care, then polished to a high gloss that your mother would be proud of.

On the other hand, using only a couple pieces of power hacksaw blade to make the parts from, a dremel™ tool, hand drill, and one or two files to do the work, you can cut out the "Lightning Link" in about an hour.

The first description will make a link that you could most likely pass on to your great grandkids. The second may not last that long, but I know of one made from mild steel, that has never been hardened or tempered. It's been used to fire over 5,000 rounds, and's still going strong. All that ever goes wrong with it is the part the bolt carrier hits gets peened over after about five or six hundred rounds. When that happens, the gal that owns it drops it out of the gun, puts it on the rear bumper of her Jeep and beats it back in shape with a rock. She's then back in business for a few hundred more rounds.

The only complaint I've ever heard about the Lightning Link is it converts the firearm to full-auto only. I can't see that's a prcblem. No one says you have to hold the trigger down until the magazine's empty. I've found with a little practice it's easy to fire two shot bursts using the link.

Also keep in mind, that it takes only about ten seconds to install the Lightning Link in a standard unaltered AR-15, and only about six seconds to remove it. Going from semi-auto to full and back to semi is only a matter of seconds.

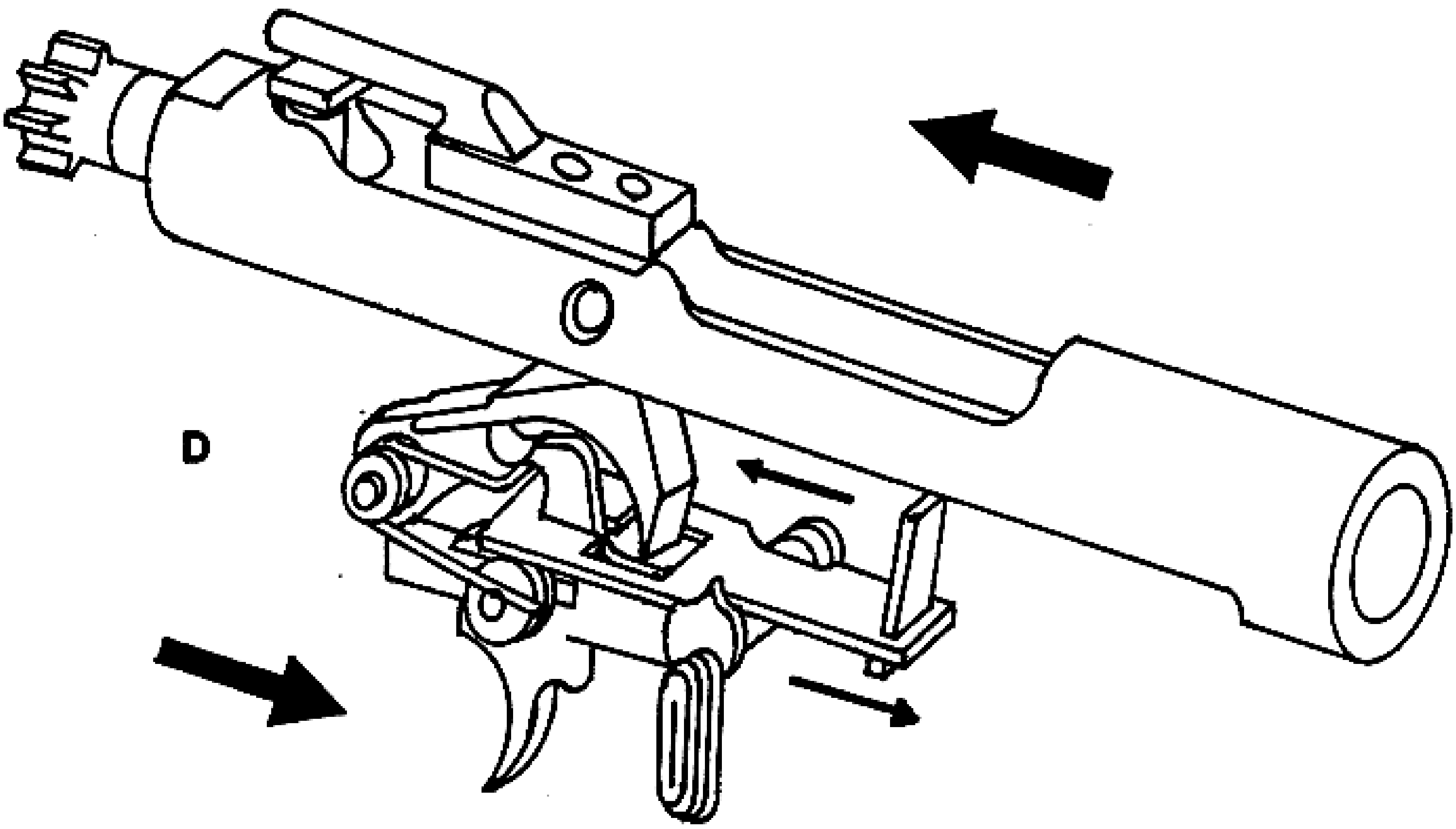


THE "LIGHTNING LINK"

THE WAY IT WORKS

In normal semi-auto operation the hammer is cocked by a rearward movement of the bolt carrier, as the carrier moves forward, the hammer is caught and held in the cocked position by the sear located on the forward part of the trigger catching in the sear notch, on the hammer. If you hold the trigger after a shot's fired the sear will not catch in the hammer's sear notch when the hammer cocks because the sear is depressed below the arc of the hammer notch.

What happens is because the trigger is being held back, the disconnector hook is tipped forward and in position to catch the hammer, stopping it from following the bolt carrier forward. When the trigger is released, it allows the hammer to slip from under the disconnector hook and be caught by the trigger sear in the hammer sear notch. Making it necessary to pull the trigger for each shot.



LIGHTNING LINK

As long as the trigger is held back, the sear is held below the arc of the hammer notch. The only thing holding the hammer in the cocked position is the disconnector.

The lightning link accomplishes full-auto fire by pulling the disconnector to the rear forcing it to release the hammer.

The assembled link lays flat in the lower receiver, with the opening at the front fitting over the hook of the disconnector, and the upright resting between the upper receiver take-down pin post, and the bolt carrier.

In operation the take-down pin post acts as a fulcrum point. When the bolt carrier strikes the top of the links upright the lower end is rocked to the rear, moving the body of the link backward about 1/16 inch, releasing the hammer from under the disconnector hook. As long as the trigger is held back the rearward movement of the bolt carrier will cock the hammer under the disconnector hook. The forward movement of the carrier will strike the upright of the link just as the bolt locks in battery, releasing the hammer, and firing the weapon. When the trigger is released, the sear will stop the hammer in the cocked position negating the operation of the disconnector and lightning link.

BUILDING LIGHTNING

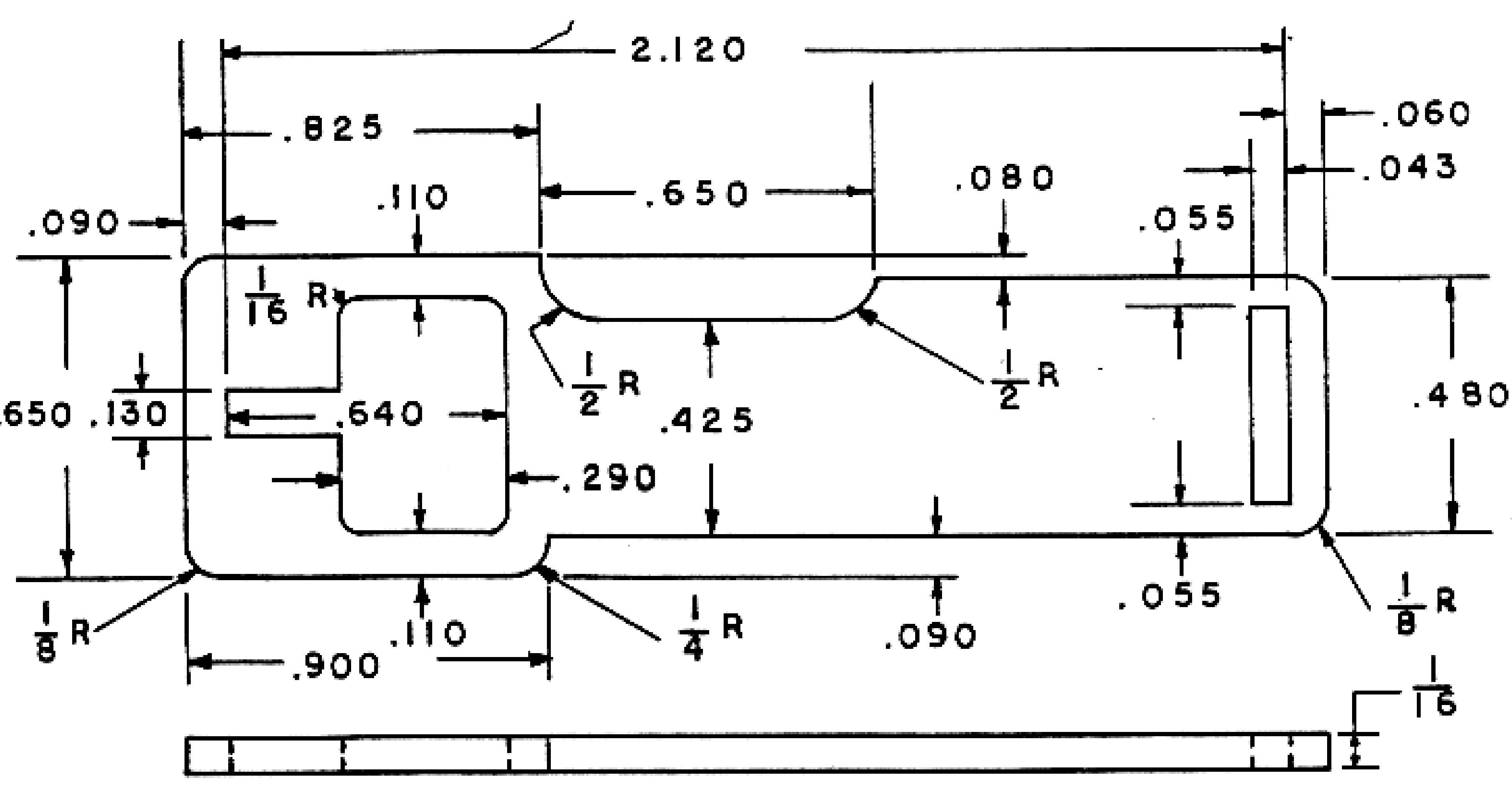
The drawings show the shape and give the dimensions for a Lightning Link that fits in the Colt[tm] AR-15. If it's to fit in an after market lower receiver it may be necessary to change the outside dimensions. Either way, all that's really important is that it fits inside the receiver and can move back and forth about 1/16 inch.

When building the Lightning Link without a milling machine I find the simpliest way is to cut the long piece to length and width. Next center punch and drill a 1/8 inch hole at each corner of the large oblong hole at one end. With a dremel[tm] tool and bonded cutoff wheel cut out the material between the four holes you drilled.

Next center punch and drill a 1/8 inch hole so you can cut out the .130 wide tail that extends out of the oblong you have already cut. NOTE.....Do not square off the end of the .130 cut at this time.

Center punch and drill a 1/32 inch hole at each end of the .043 slot at the other end of the part. Cut the slot out with the dremel[tm] tool and bonded cutoff wheel. Square the ends and finish the slot using a needle file.

Clean up the oblong hole and .130 wide cut with a small file. NOTE.....Now's the time to square the end of the .130 cut. CAREFUL..... Don't get carried away. The distance between the front (squared end) of the.130 cut and the rear face of the .043 slot can not be any more than 2.120.

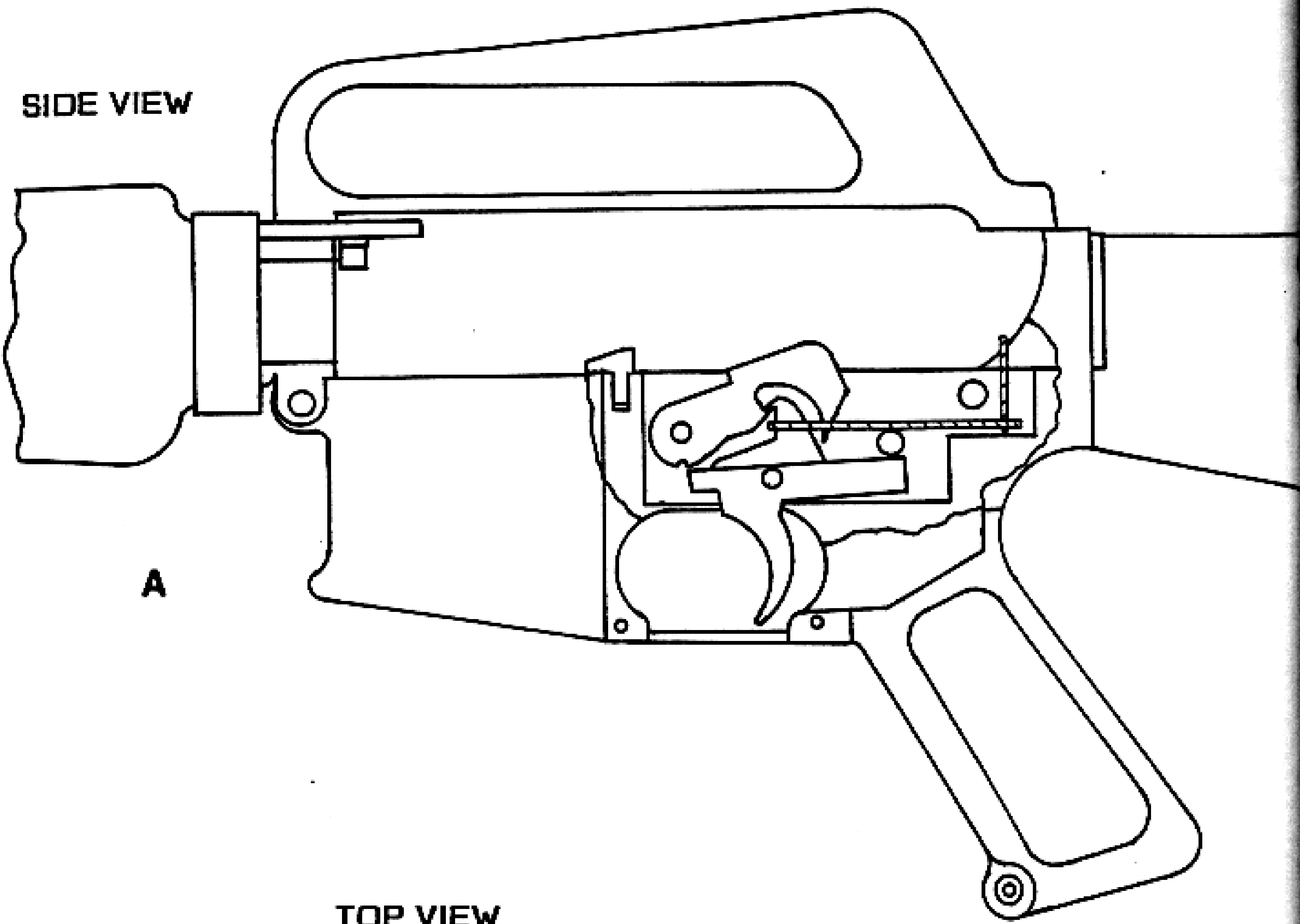


File or grind the outside edges to shape until it fits into the lower receiver without touching the inner receiver walls.

To check the link for fit and function, drop it over the hook on the disconnector, refer to drawings (A) and (B). Hold the trigger back and cock the hammer. It will be caught by the disconnector hook. Now place a scribe or anything that will fit into the slot at the rear of the link and pull it toward the back of the receiver, the hammer should fall. If it did, keep holding the trigger, recock the hammer and do it all again. As long as you hold the trigger back, the link will release the hammer. When you release the trigger, the link can no longer release the hammer from the cocked position.

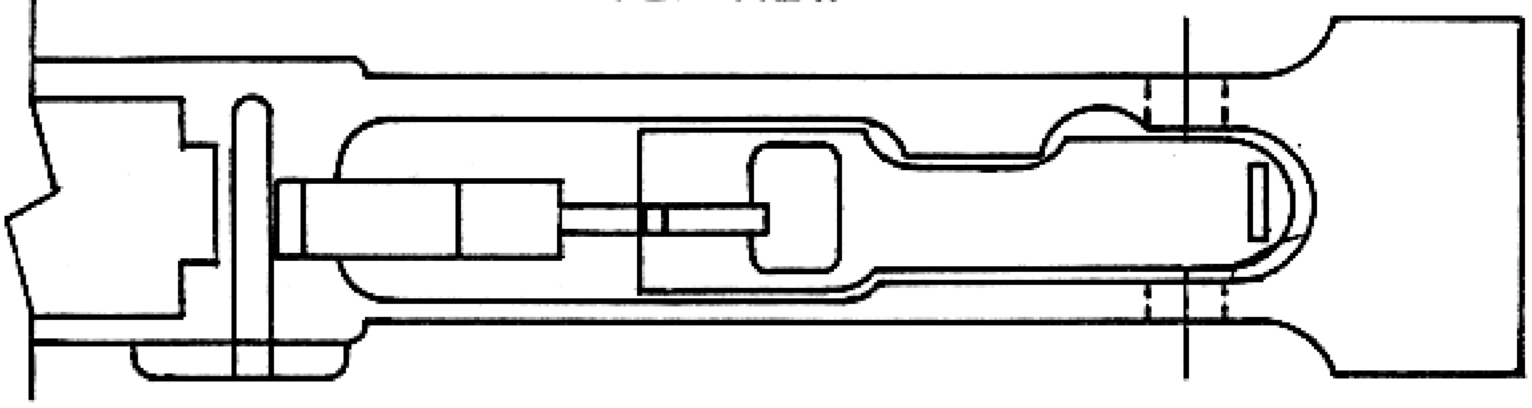
If the link would not move back far enough to pull the disconnector hook off the hammer, find out what's stopping it and correct the problem.

SIDE VIEW

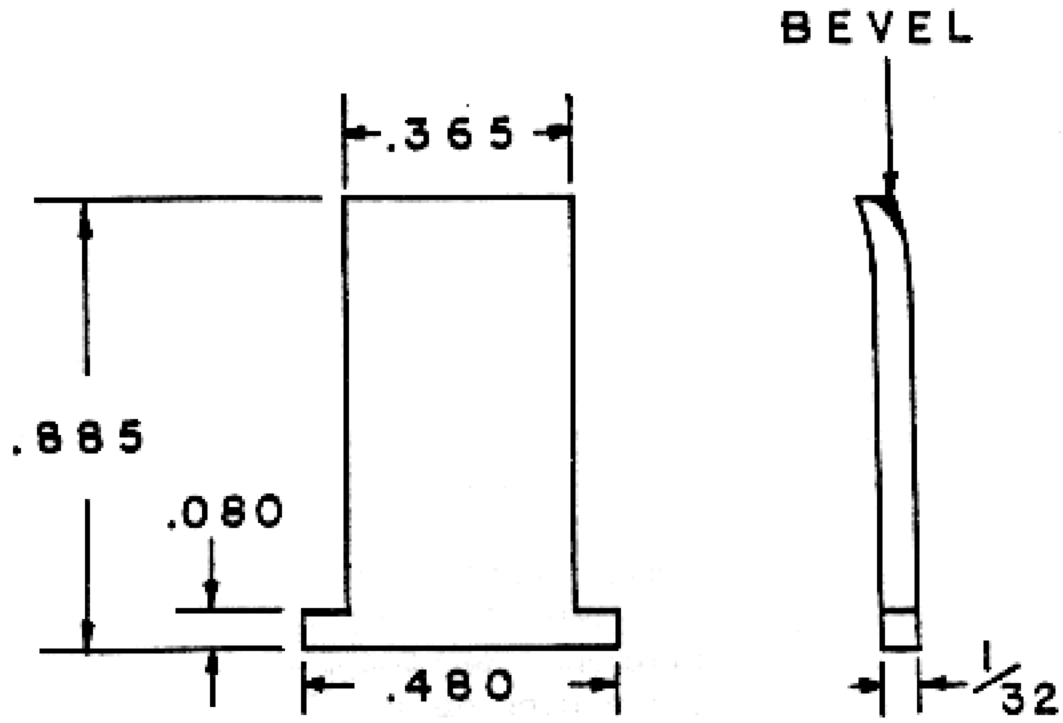


A

TOP VIEW



B



Cut the upright part to length and file o grind it to shape. File a slight bevel at th top rear side of the upright.

UPRIGHT

Assemble the parts. Refer to drawing [C]. Install the parts in the lower receiver. See drawing [A]. Tip the weapon so the link's upright rests against the rear of the receiver. Close the upper until the take-down pin post is far enough into the lower receiver, that when you tip the firearms muzzle down the link's upright can rest against the post. Continue closing the weapon until it's completely closed. NOTE..... This first time you may have trouble getting the link upright to slide in place between the rear of the take-down pin post and the bolt carrier. All I can tell you is wiggle and jiggle things until it goes in place. It will fit in place much easier after it's shaped by the bolt carrier.

After the take-down pin is in place, hold the trigger back and operate the bolt carrier about five times. The bend in the top of the links upright is formed at this time by the bolt carrier hitting it. See drawing [D]. Be sure to let the bolt slam with full force each time. Now's the time to find out if everything's working right. Cock the weapon, point it in a safe direction and pull the trigger. You should hear the hammer fall. Keep holding the trigger, cock the weapon, and release the trigger. Pull the trigger, nothing should happen, the lightening link will have released the hammer when the bolt carrier closed.

TEST FIRE

See CHAPTER ONE for safety and ammunition precautions.

Load two rounds in the magazine. The first will fire when you pull the trigger, the second will fire automatically.

Check the brass for any problems. If all's well, load five rounds and let'er rip. That's it for now.

HARDENING

After test firing five rounds remove the lightning link from the weapon, check it for burrs or rough spots. Clean it up to your satisfaction, then break out the torch and harden the parts. Refer to CHAPTER TWO for hardening and tempering instructions.

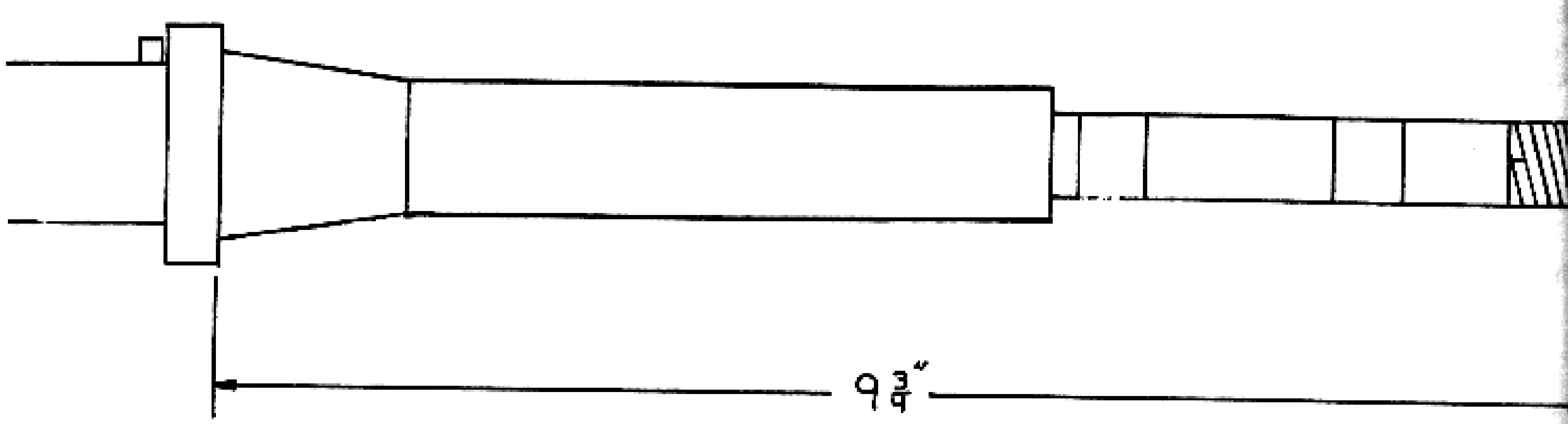
NOTES

BARREL LENGTH

Shortening the barrel is a job that's best done on a lathe. It's just about impossible to cut it o and rethread it by hand and get everything straight.

Whether you chop it off with a hacksaw and rethread it with a die or cut, crown and thread on a lathe, keep in mind a barrel is measured from the bolt face to the muzzle, not from the fro of the receiver to the muzzle.

The drawing and table indicate how to measure and cut the barrel for the most popular lengths.



TABLE

9 3/4 inches equal a 10 1/2 inch barrel
10 3/4 inches equal a 11 1/2 inch barrel
13 3/4 inches equal a 14 1/2 inch barrel

NOTES

CHAPTER SIX

PARTS AND TOOL SUPPLIERS

It's hard to do a job without the proper tools, and darn near impossible without the right parts.

I want to thank the companies that are listed below, for graciously giving permission to include their names and addresses, that you may obtain tools, parts or services directly from them.

SUPPLIERS

Nesard
P.O. Box 56
Lake Zurich, Illinois 60047

L.H. Manufacturing Company
Route 1, Box 210
Devine, Texas 78016

Texas Armament Co.
905 Pecan Street
Brownwood, Texas 76801

Federal Ordnance Inc.
P.O. Box 6050
So. El Monte, California 91733

Sherwood International
18714 Parthenia Street, Dept. SGN 6
Northridge, California 91324

The Southwest Trading Co.
P.O. Box 10952
Houston, Texas 77018

Numrich Arms Corp.
West Hurley, New York 12491

Quality Parts Company
P.O. Box 6659 Woodfords
Portland, Maine 04103

Cadre Supply
Box 22074
Memphis, Tennessee 38122

TOOLS

Kitts Industrial Tools
22384 Grand River Avenue
Detroit, Michigan 48219

Frank Mittermeier, Inc.
3577 E. Tremont Avenue
Bronx, New York 10465

Brownell's Inc.
Route 2, Box 1
Montezuma, Iowa 50171

J & L Industrial Supply
P.O. Box 40625
Detroit, Michigan 48240